

Bulletin of the Museum of Comparative Zoology

A T H A R V A R D C O L L E G E

Vol. 118, No. 6

THE SPIDER SUBFAMILY CLUBIONINAE OF THE
UNITED STATES, CANADA AND ALASKA
(ARANEAE: CLUBIONIDAE)

BY ROBERT J. EDWARDS

WITH TWENTY-THREE PLATES

CAMBRIDGE, MASS., U.S.A.

PRINTED FOR THE MUSEUM

JUNE, 1958

No. 6 — *The Spider Subfamily Clubioninae of the United States,
Canada and Alaska (Araneae: Clubionidae)*¹

BY ROBERT J. EDWARDS

Introduction. The subfamily Clubioninae has been in a state of confusion for some time, and little has been done to rectify this condition except for the fine paper by Gertsch (1941, Amer. Mus. Novitates, no. 1148) on the *abbotii* group of the genus *Clubiona*. Many of the original descriptions and figures are of no diagnostic value.

During this study it became evident that common and widely distributed species have subspecies. Lack of sufficient material prevented a careful study of these.

Acknowledgments. This study was conducted in the zoological laboratories of the University of Rochester under the supervision of the late Dr. S. C. Bishop, to whom I am greatly indebted for his constant interest, helpful advice and criticism. I am especially grateful to Dr. W. J. Gertsch of the American Museum of Natural History, and to the late Miss E. B. Bryant of the Museum of Comparative Zoology, for the use of the very extensive collections at those institutions and for very valuable suggestions and information. Large collections were also made available for study through the courtesy of Dr. H. K. Wallace, University of Florida; Mr. T. Kurata, Royal Ontario Museum of Zoology; and Dr. H. Dietrich, Cornell University. All figures were drawn by Miss Carolyn Fallon, former staff artist for the Department of Zoology at the University of Rochester.

¹This thesis was submitted, in partial fulfillment for the degree of Doctor of Philosophy, to the faculty of the University of Rochester in May 1951. Since it remained unpublished, I received permission from the author to prepare it for publication. It was rewritten, shortened, and keys to the females of the genus *Clubiona*, and plates of the cleared epigyna were added. I want to express my thanks for the help of Prof. K. Cooper; to the editors of the American Midland Naturalist for providing engravings they had made before they knew the paper could not be published there; to Dr. W. J. Gertsch for his valuable suggestions and help in bringing the paper up to date, and reading the revised version; to the J. H. Emerton Legacy for providing funds for publishing the manuscript; to Mrs. Lorna R. Levi for help in making a key to the females; to Mr. R. X. Schick for providing some California specimens. Complete descriptions, additional measurements and collecting data can be found in the original thesis deposited in the University of Rochester library. The extensive bibliography was omitted and references to the two recent catalogs on spiders have been added. Some misprints have been corrected and a few records were added.

Methods. Where large numbers of specimens were available, at least twenty mature individuals of each sex were measured for length; with fewer, all specimens were measured. The average length for each species was determined, as well as the extremes for the specimens at hand. For the rest of the measurements, individuals were selected which were as close as possible to the average length. In determining the length of a specimen, the distance between the anterior edge of the clypeus and the tip of the anal tubercle was measured.

An asterisk placed before a record indicates that it was taken from literature. Illustrations were made with a camera lucida, and are not to scale.

Clubionidae

Characteristics. As in the Thomisidae and Heteropodidae, clubionid species have eight eyes in two rows, and tarsi with two terminal claws. These spiders differ from those of the two aforementioned families in body form and in that the legs are not laterigrade. They differ further from the Thomisidae in the possession of a distinct, toothed lower margin of the furrow of the chelicerae. The truncate end of the endite is furnished with a scopula, and the tarsi are usually furnished with bundles of complex terminal tenent hairs. The clubionids have contiguous fore spinnerets, while those of the related family Gnaphosidae are widely separated.

Subfamilies. The four subfamilies are difficult to separate with a key. In the Clubioninae, the labium is usually much longer than wide and extends beyond the middle of the endites whereas in the closely related Liocraninae, the labium is not at all or just barely longer than wide and does not extend beyond the middle of the endites. The Clubioninae have the endites narrower at the middle than at the apex, a characteristic which aids in separating them from the Liocraninae. The Micarinae and Corinninae are readily separated from the Clubioninae in that the apical segment of the posterior spinnerets is always very short, flattened or rounded and usually very indistinct, whereas in the Clubioninae, this structure is conical and always distinct.

Clubioninae

Characteristics. In addition to the characters mentioned above, the margins of the chelicerae are oblique, and all tarsal claws are pectinate in a single row. The female palpus is armed with a single claw. The tarsi are all furnished with bundles of terminal tenent hairs, forming conspicuous cushions beneath the tarsi in the common light-colored species.

There is little difference between the sexes. The males are usually slightly smaller, often with longer and more attenuated chelicerae, somewhat longer and more noticeably spinose legs, and somewhat narrower pars cephalica.

Natural History. All Clubioninae build flat tubular silken retreats on plants, in rolled leaves, on the ground, under stones or rubbish or in moss. Most species are nocturnal, hiding in their nests during the day, hunting and foraging at night. Mating occurs in the retreat where the egg cocoons are kept, the female usually guarding them. In mating, these spiders usually assume the following position: male right side up with the ventral surface of the cephalothorax resting on the dorsum of the cephalothorax of the female, the male facing the posterior end of the female. The male uses the first three pairs of legs to grasp the female around the abdomen and legs, the last pair of legs resting on the ground. The male transfers the sperm by extending the palps around the sides of the female's abdomen at the anterior end. In *Chiracanthium* the mating position is as follows: the female hangs head down from the nest, the male takes up a position under her, facing so that their ventral surfaces are opposed. The male grasps the female with the first two pairs of legs and transfers sperm to the sperm duct openings of the female by means of the palpi.

Key to Genera

- | | |
|--|----------------------|
| 1. Median groove present on thorax | 2 |
| 1. No median groove present on thorax | <i>Chiracanthium</i> |
| 2. Posterior row of eyes straight or slightly procurved | 3 |
| 2. Posterior row of eyes obviously recurved | <i>Lauricius</i> |
| 3. Anterior median eyes much larger than anterior laterals | <i>Strotarchus</i> |
| 3. Anterior median eyes at most slightly larger than anterior laterals | 4 |

4. First femur with one distal prolateral spine; dorsum of abdomen pale yellow-brown to red-brown *Clubiona*
4. First femur with two distal prolateral spines; dorsum of abdomen pale gray to yellow-gray, usually with dark gray stripes and spots *Clubionoides*

CHIRACANTHIUM C. Koch

Chiracanthium C. Koch, 1839, Die Arachniden, vol. 6, p. 9. Type species: *C. punctorium* (Villers).

Description. Carapace without median thoracic groove. Eyes subequal in size. Posterior median eyes farther from laterals than from each other. Chelicerae long and powerful, armed with three contiguous teeth on lower furrow. Leg length 1,4,2,3. Cymbium of male with a slender process directed backward; this process varying in length even in the same species. Coloration pale without conspicuous markings.

Natural History. Nocturnal in habit; during the day they are found in their silken tube retreats on brush and low vegetation.

Misplaced species. *Chiracanthium falculum* Chamberlin, 1925, is *Aysha velox* (Becker).

Key to Males

1. Tibia of palpus with two rather short apophyses, one dorsal, the other retrolateral in position. (Fig. 7) *C. mildei*
1. Tibia of palpus with a single long, retrolateral apophysis. (Fig. 10) *C. inclusum*

Key to Females

1. Epigynum a simple oval depression (Fig. 13) *C. inclusum*
1. Epigynum with a dark, sclerotized transverse bar, laterad of which are kidney-shaped dark areas (Fig. 14) *C. mildei*

CHIRACANTHIUM INCLUSUM (Hentz)

Figures 10-13, 17, 202

Clubiona inclusa Hentz, 1847, Jour. Boston Soc. Nat. Hist., vol. 5, p. 451, pl. 23, fig. 18. (Types from "South Carolina, North Carolina, etc.," lost.)

Chiracanthium viride Emerton, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 184, pl. 5, fig. 12 (δ type from Saugus, Massachusetts, in the Museum of Comparative Zoology.)

Chiracanthium inclusum, Roewer, 1955, Katalog der Araneae, vol. 2a, p. 488.

Chiracanthium inclusum, Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1057.

Measurements. Female: Length: 4.80-9.24 mm.; average 7.20 mm. Carapace 3.12 mm. long, 2.28 mm. wide. First femur, 3.48 mm.; patella, 1.20 mm.; tibia 3.00 mm.; metatarsus, 2.94 mm.; tarsus, 1.32 mm. Fourth femur, 3.12 mm.; patella, 1.20 mm.; tibia, 2.10 mm.; metatarsus, 2.70 mm.; tarsus, 0.86 mm.

Male: Length, 4.08-7.56 mm.; average 5.76 mm. Carapace 2.52 mm. long, 1.86 mm. wide. First femur, 4.08 mm.; patella, 1.20 mm.; tibia 4.08 mm.; metatarsus, 4.20 mm.; tarsus, 1.68 mm. Fourth femur, 3.24 mm.; patella, 1.02 mm.; tibia, 2.64 mm.; metatarsus, 3.72 mm.; tarsus, 1.10 mm.

Structure. Median eyes separated by one diameter, the same distance or less from the equal-sized laterals. The second row straight to weakly procurved, medians separated by twice their diameter, same distance from subequal laterals in the female, three-fourths as far in the male.

Natural History. This is the most common member of the Clubioninae in the region. This species has been collected on shrubs and low vegetation in woods which fringe streams and in moist woods. *Chiracanthium inclusum* overwinters mainly in the penultimate instar, maturing in May and June. Adults have been found hibernating under leaves and debris on the ground. The non-agglutinate eggs are laid in a loose mass and are covered only with a thin coat of loosely spun silk as in *Strotarchus*. A female encased in a cocoon with her egg sac was collected in New Jersey on August 18. The egg sac was spherical, measuring 6.70 mm. in diameter, and contained 112 pale yellow, spherical eggs, each measuring about 1.08 mm. in diameter. Another female was collected in a nursery composed of a folded blade of a broad-leaved grass, on August 17, in Florida. With the female were found 34 spiderlings.

Distribution. All but the most northern parts of the United States; Mexico and West Indies, South America.

Records. Alabama: Grove Hill; Moundsville; Birmingham; Auburn; Clearcreek; Pea Riv. Project; Silver Hill. *Arizona:* Mount Lemmon; Elgin; Flagstaff; Sabino Canyon; Tucson; *Grand Canyon; *Bright Angel; Prescott. *Arkansas:* Hope; Washington Co. *California:* Santa Barbara; *Berkeley; Fresno; Los Angeles Co.; *Paint Seer, *Live Oak Park; *Mill Valley; *Claremont; Los Angeles; Yosemite Natl. Pk.; Felton; Fort Seward; Tracey; Castro Valley; Riverside; Needles. *Colorado:* Cameron. *Connecticut:* *Bethany; *Cheshire; *Colchester; *Killingworth; *New Haven; Northford; *South Meriden; *Volluntown. *District of Columbia.* *Florida:* *Runnymede; *Punta Gorda; *Altoona; *Enterprise; *Miami; *Winter Park; nr. Oldtown; Big Tree, nr. Longwood; Gainesville; Ocala; Dade Co.; Olney; Lake Placid; Arcadia; Indian Town; nr. Sarasota; Lido Key, Sarasota; Okeechobee, Titusville; Orlando; Sanford; Lake City; Naples; Tamiami Trail, Pinecrest; Clearwater; MacDill Field, Archbold Biol. Sta.; Sebastian; Tallahassee; Wakulla Springs. *Georgia:* Waycross; Thomasville; *Sardes to Waynesboro; *Burke County; *E. and W. of Sylvania; Okefenokee Swamp; *Gainesville; *W. of Athens; *S. of Lake Park. *Illinois:* *Waukegan; Kankakee Co.; Pulaski Co. *Indiana:* *Vincennes. *Louisiana:* Shreveport; Kisatchie Natl. For.; Sorrento; East Baton Rouge Par.; Lake Charles; Tallulah; *Baton Rouge. *Maryland:* Wicomico Co. *Prince Georges Co. *Massachusetts:* *Nantucket; *Blue Hill; *Sharon; *Charlestown; *Hyde Park; *Dedham; *Saugus. *Michigan:* Sanford. *Mississippi:* E. of Morton; Centerville; Agricultural College; Holly Springs; Lucedale; Hattiesburg; Kessler Field. *Nebraska:* Valentine. *New Jersey:* Orange Mountains; Lakehurst. *New Mexico:* *Mesilla Park. *New York:* Flushing, L. I.; Coram; Cranberry Lake; Amagansett; Greenport. *Nevada:* Las Vegas. *North Carolina:* Raleigh; Woodsville; *Southern Pines. *Ohio:* Columbus; Ceder Point. *Oklahoma:* Carter Co.; Norman. *Oregon:* The Dalles. *South Carolina:* 10 mi. S. of Columbia; Bethune. *Tennessee:* Irving; Knoxville. *Texas:* 32 mi. SW. of Laredo; Harlingen; Jourdanton; Texas City; Houston; Pharr; Monte Cristo; swamp 9 mi. W. of Athens; Victoria; SE. of Oak Cliff, Dallas; Livingston; Raymondville; 4 mi. SE. of Edinburg; 5 mi. E. of Edinburg; Edinburg; Brownsville; Bon Wier. *Utah:* Bluff; Salt Lake City; Zion Natl. Pk.; Brigham; Big Cottonwood Canyon. *Washington:* Mountain Lake.

CHIRACANTHIUM MILDEI L. Koch

Figures 7-9, 14, 16, 203

Chiracanthium mildei L. Koch, 1864, Abhandl. Naturhist. Gesell. Nürnberg, vol. 3, p. 144. (Types from Meran, Southern Tyrol.) Bryant, 1951, Psyche, vol. 58, p. 120. Roewer, 1955, Katalog der Araneae, vol. 2a, p. 480.

Chiracanthium mildei, Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1061.

Measurements. Female: Length, 9.84 mm. Carapace 3.66 mm. long, 2.64 mm. wide. First femur, 4.32 mm.; patella, 1.44 mm.; tibia, 3.84 mm.; metatarsus, 3.96 mm.; tarsus, 1.38 mm. Fourth femur, 3.84 mm.; patella, 1.32 mm.; tibia, 2.58 mm.; metatarsus, 3.72 mm.; tarsus, 0.96 mm.

Male: Length, 7.20 mm. Carapace, 3.48 mm. long; 2.40 mm. wide. First femur, 5.28 mm.; patella, 1.56 mm.; tibia, 5.58 mm.; metatarsus, 6.06 mm.; tarsus, 2.04 mm. Fourth femur, 4.25 mm.; patella, 1.44 mm.; tibia, 3.60 mm.; metatarsus, 5.16 mm.; tarsus, 1.14 mm.

Description. The carapace and eye arrangement as in *C. inclusum*.

Distribution. Mediterranean countries, probably introduced in this country.

Records. *Alabama:* Colbert Co., ♀. *Connecticut:* *New Britain, ♂, ♀. *Massachusetts:* *Cambridge, ♀. *New Jersey:* Newark. *New York:* New Rochelle, ♀. *Utah:* Black Pavilion, Salina, ♀ (W. J. Gertsch).

LAURICIUS Simon

Lauricius Simon, 1888, Ann. Soc. Ent. France, vol. 8, p. 208. Type species: *L. hemicloecinus* Simon.

Description. Carapace relatively flat and broad, with median groove well developed. Eyes subequal in size. Anterior medians closer to laterals than to each other; posterior row distinctly recurved and eyes equidistantly placed. Chelicerae short and robust, swollen at base.

LAURICIUS HOOKI Gertsch

Figures 4-6, 18, 204

Lauricius hemiclocinus, Gertsch, 1935, Amer. Mus. Novitates, no. 792, p. 29.

Gertsch, 1935, *ibid.*, no. 805, p. 111, figs. 16-19. (both err. det.).

Lauricius hooki Gertsch, 1941, *ibid.*, no. 1147, p. 20. (♀ type from 17 mi.

NE. of Whiteriver, White Mtns., Arizona, in the American Museum of Natural History.)

Measurements. Female: Length, 10.68-18.00 mm.; average, 13.86 mm. Carapace 5.52 mm. long, 4.80 mm. wide. First femur, 4.80 mm.; patella, 2.04 mm.; tibia, 3.84 mm.; metatarsus, 3.48 mm.; tarsus, 1.80 mm. Fourth femur, 5.40 mm.; patella 2.16 mm.; tibia, 3.96 mm.; metatarsus, 4.44 mm.; tarsus, 1.86 mm.

Male: Length, 10.08-10.80 mm.; average 10.49 mm. Carapace 4.92 mm. long, 3.84 mm. wide. First femur, 4.68 mm.; patella, 2.26 mm.; tibia, 4.68 mm.; metatarsus, 4.35 mm.; tarsus, 2.30 mm. Fourth femur, 5.06 mm.; patella, 2.00 mm.; tibia, 4.80 mm.; metatarsus, 5.20 mm.; tarsus, 2.38 mm.

Description. Chelicerae armed with two teeth on lower margin. First pair of legs spined: femur 1-1-0 dorsal, 0-1-1 retrolateral, 1-1-1 prolateral; tibia 2-2-0 ventral; metatarsus 2-2-0 ventral. Carapace dark red-brown with darker margins and sutures. Chelicerae, labium dark red-brown. Sternum yellow-brown. Abdomen brownish gray. The male has longer chelicerae and legs than the female.

Comments. Although this species differs from the Mexican *L. hemiclocinus* by its smaller size and by having a shorter scape in the epigynum, it is quite possible that *L. hooki* is a subspecies of *L. hemiclocinus*.

Distribution. Arizona, New Mexico.

Records. Arizona: Santa Catalina Mtns., ♀, ♂; 17 mi. NE. of Whiteriver, ♀; Beaver Creek, ♂; Santa Rita Mtns., ♀; *Mount Lemmon, ♀; *Water Camp, ♂, ♀. New Mexico: Camp Mary White, Otero County, ♂, ♀.

STROTARCHUS Simon

Strotarchus Simon, 1888, Ann. Soc. Ent. France, vol. 8, p. 210. Type species:

S. nebulosus Simon.

Bedriacum O. P. Cambridge, 1898, Biologia Centrali Americana, Araneida, vol. 1, p. 250. Type species: *B. praedator* O. P. Cambridge.

Marcellina Bryant, 1931, *Psyche*, vol. 38, p. 103. Type species: *Clubiona piscatoria* Hentz.

Description. Carapace with a long thoracic groove. Clypeus high. Anterior median eyes much larger than others. Ocular quadrangle slightly wider in front. Posterior eyes subequal in size and equidistant, slightly procurved. Chelicerae robust. Anterior legs longer than posterior.

STROTARCHUS PISCATORIUS (Hentz), new combination

Figures 1-3, 15, 205

Clubiona piscatoria Hentz, 1847, *Jour. Boston Soc. Nat. Hist.*, vol. 5, p. 450, pl. 23, fig. 15 (Types from Alabama lost).

Marcellina piscatoria, Roewer, 1955, *Katalog der Araneae*, vol. 2a, p. 542.

Measurements. Female: Length 7.60-9.20 mm.; average 8.32 mm. Carapace 4.00 mm. long, 2.96 mm. wide. First femur, 4.16 mm.; patella, 1.68 mm.; tibia, 3.44 mm.; metatarsus, 3.60 mm.; tarsus, 1.60 mm. Fourth femur, 4.00 mm.; patella, 1.44 mm.; tibia, 2.88 mm.; metatarsus, 3.28 mm.; tarsus, 1.28 mm.

Male: Length, 7.20-8.72 mm.; average 8.08 mm. Carapace, 3.60 mm. long, 2.68 mm. wide. First femur, 4.24 mm.; patella, 1.44 mm.; tibia, 4.00 mm.; metatarsus, 4.00 mm.; tarsus, 1.68 mm. Fourth femur, 3.76 mm.; patella, 1.28 mm.; tibia, 2.96 mm.; metatarsus, 3.68 mm.; tarsus, 1.32 mm.

Description. Anterior median eyes separated by slightly less than their diameter, closer to laterals. Second row slightly procurved. Posterior medians separated by one and three-fourths diameters, slightly closer to laterals. Median ocular quadrangle slightly wider than long, narrower behind. Two widely separated teeth on lower margin of chelicerae.

First femur with 1-1-0 dorsal spines and two distal prolaterals; tibia with 0-2-0 ventral spines and a single distal prolateral in female; 0-1-1 in male; metatarsus with 2-2-1 ventral spines and 0-1-0 prolaterals. Spines short and dark brown in color. Carapace light brown. Chelicerae dark red-brown. Sternum yellow-brown with dark brown margins. Abdomen pale yellow-gray.

Comments. The cymbium of the male palpus is greatly elongated (Figs. 1, 2). The posterior spinnerets are considerably longer in this species than in most others of this subfamily.

Natural History. This species has been collected from very thin silken sacs under stones, and from trees with the use of a flashlight at night. Specimens of both sexes in the penultimate instar were collected by Kaston May 8th, these individuals maturing between the 12th and the 18th of May. Kaston also observed the copulation of this species in the laboratory (1938, *Canad. Ent.*, vol. 70, p. 12). The copulatory act took place by one pair on two successive days, the female tolerating the male in an adjacent silk bag between mating acts. No males were in evidence by the 4th of July and several females were guarding the egg sacs. The eggs are pale yellow in color, semiagglutinate, and loosely grouped together in a thin transparent silken cocoon. The egg sacs are usually found on the under-side of stones. One such egg sac was found to contain 46 spherical eggs and another 47 eggs, each of which had a diameter of about 1.08 mm. Hentz claimed that this spider made an even web like the Agelenidae. When disturbed, these spiders feign death, making no attempt to escape.

Records. *Alabama:* Alberta City; *Auburn; *Opelika. *Connecticut:* *Portland; *Redding; *Southbury; Stamford; *North Stamford. *Florida:* Jackson County; Giles County; N. of Winter Park. *Georgia:* *Millen; NE. of Sylvania. *Louisiana:* Kisatchie Natl. For. *Maryland:* *College Park. *Massachusetts:* *Newton. *New Jersey:* Oakland.

STROTARCHUS PLANETICUS, new species

Figs. 159, 179, 206

Type. Female holotype from Laguna Madre, 25 miles southeast of Harlingen, Texas, June 13, 1945 (D. E. Hardy and V. L. Wooley), in the American Museum of Natural History. This specimen was taken from the nest of *Neotoma micropus* Baird.

Measurements. Female: length 8.08 mm. Carapace 3.60 mm. long, 2.64 mm. wide. Abdomen, 4.72 mm. long, 2.80 mm. wide. First femur, 3.90 mm.; patella, 1.44 mm.; tibia, 3.44 mm.; metatarsus, 3.28 mm.; tarsus, 1.60 mm. Fourth femur, 3.84 mm.; patella, 1.20 mm.; tibia, 2.80 mm.; metatarsus, 2.48 mm.; tarsus, 1.20 mm.

Description. Clypeus equal in height to diameter of an anterior median eye. First row of eyes weakly recurved as seen from the front. The median eyes separated by slightly more than the diameter of one of them, less than half as far from the subequal lateral eyes. The second row of eyes gently procurved, the median eyes separated by one and a half diameters, nearer to slightly smaller lateral eyes. Chelicerae armed with two rather widely spaced teeth on lower margin. First femur with 1-1-0 dorsal spines and two distal prolateral spines; tibia with 2-2-0 ventral spines and 0-1-1 prolateral spines; metatarsus with 2-2-1 ventral spines and 1-1-2 prolateral spines. All spines are short and dark brown in color.

Carapace light yellow-brown posteriorly and on sides, light brown anteriorly shading to a light red-brown in pars cephalica. Chelicerae dark brown. Labium and endites brown except for small pale yellow area on distal margin of endites. Sternum light yellow-brown except for brown margins. First pair of coxae longest; concolorous with sternum; other coxae pale yellow-brown with thin, dark brown proximal margins. First two pairs of legs light amber, the posterior pairs somewhat lighter in color. Coxae and legs clothed with rather long sub-erect hairs and scattered erect dark setae. Abdomen pale gray-white and unmarked, clothed with recumbent dark hairs and scattered suberect bristles which are most numerous and longest at base of abdomen.

Diagnosis. This species is closely related to *Strotarchus piscatorius* (Hentz), but is readily distinguished, in that the anterior median eyes are considerably smaller in *S. planeticus*. The median ocular quadrangle of *S. planeticus* is broader behind, whereas it is narrowed behind in *S. piscatorius*. The shape of the opening of the epigynum differs in the new species, as do other details (Fig. 159).

CLUBIONOIDES new genus

Type. *Clubionoides* (fem.) has the type species *Clubiona excepta* L. Koch.

Description. Carapace with a median groove. Posterior eyes equidistant, or medians closer to laterals. Fourth legs longer than first. The first femur with 1-1-1 dorsal spines and 2 distal

prolateral; tibia with 2-2-0 ventral spines; metatarsus with a single pair of ventral spines at base. Second femur with 1-1-1 dorsal spines and one distal, prolateral; tibia usually with 1-2-0 ventral spines; sometimes 2-2-0 (as in *Clubiona*); metatarsus with 2-0-0 ventral spines. Third tibiae with 1-1-1 ventral spines (instead of 1-1-0 as in *Clubiona*); metatarsi 2-2-2 ventral spines (instead of 2-0-2 of *Clubiona*). Hind spinnerets longer than fore spinnerets. North American species all pale with dorsum of abdomen usually distinctly marked by gray to gray-brown chevrons and stripes.

Diagnosis. Male palpi with a single, simple flat retrolateral apophysis, variable in shape (Figs. 24, 29, 33, 34). Bulb also distinctive and different from that of *Clubiona*; the embolus and conductor being relatively short and often hidden. The epigynum has a free anterior median scape. Receptacles near posterior edge of epigynum rather than anterior as in *Clubiona*.

Distribution. Most species of this genus occur in Central and South America; there are only five known species north of Mexico.

Key to Males

1. Tibial apophysis of palpus crescent-shaped; bulb spherical as seen from the side *C. texana*
1. Tibial apophysis of palpus not crescent-shaped; bulb as viewed from side rather flattened 2
2. Tibial apophysis of palpus quite broad, with a gently rounded ventral division and a sharply pointed dorsal division *C. excepta*
2. Tibial apophysis of palpus not as above 3
3. Tibial apophysis of palpus forming a single point directed distally; cymbium with a heavy spine on ventral surface at distal end .. *C. mulaiki*
3. Tibial apophysis of palpus very small and forming a single point directed somewhat dorsally; cymbium without heavy spine .. *C. dorothea*

Key to Females

1. Epigynum with a very short anterior median scape 2
1. Epigynum with a distinct longer anterior median scape 3
2. Epigynum with openings of sperm ducts near anterior end; oval-shaped receptacles near posterior edge of epigynum *C. dorothea*
2. Epigynum with hidden sperm duct openings; main portion of epigynum a truncated triangular depression *C. mulaiki*

3. Epigynum with sperm duct openings near posterior edge; median scape not finger-like 4
3. Epigynum with sperm duct openings near center; median scape long and comparatively narrow, finger-like *C. excepta*
4. Median scape of epigynum bi-lobed behind; sperm duct openings flattened ovals *C. texana*
4. Median scape of epigynum bluntly rounded behind and with a sclerotized, dark posterior edge *C. kohlsi*

CLUBIONOIDES EXCEPTA (L. Koch)

Figures 19, 31-33, 211

Clubiona pallens Hentz, 1847, Jour. Boston Soc. Nat. Hist., vol. 5, p. 449, pl. 23, fig. 13. (Syntypes from North Carolina and Alabama, lost.) Name preoccupied by *Clubiona pallens* Hahn, 1834.

Clubiona excepta L. Koch, 1886, Die Arachniden-Familie der Drassiden, p. 300, pl. 22, fig. 191. (Types from Baltimore, Maryland.) Roewer, 1955, Katalog der Araneae, vol. 2a, p. 514. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1123.

Measurements. Female: Length 5.28-8.56 mm.; average 6.96 mm. Carapace 3.20 mm. long, 2.19 mm. wide. First femur, 2.16 mm.; patella, 1.08 mm.; tibia, 1.56 mm.; metatarsus, 1.26 mm.; tarsus, 0.72 mm. Fourth femur, 2.64 mm.; patella, 1.04 mm.; tibia, 1.80 mm.; metatarsus, 2.46 mm.; tarsus, 0.72 mm.

Male: Length 5.04-6.96 mm.; average 5.92 mm. Carapace 2.75 mm. long, 1.92 mm. wide. First femur, 2.10 mm.; patella, 0.90 mm.; tibia, 1.74 mm.; metatarsus, 1.38 mm.; tarsus, 0.66 mm. Fourth femur, 2.58 mm.; patella, 0.96 mm.; tibia, 1.83 mm.; metatarsus, 2.46 mm.; tarsus, 0.75 mm.

Description. Anterior median eyes separated by one-half to two-thirds diameter, closer to laterals. Posterior median eyes separated by two to two and one-fourth diameters, closer to laterals. Chelicerae with three teeth on lower furrow.

Natural History. This species is usually found under stones, loose bark, dead leaves and other ground debris. These spiders overwinter in the penultimate instar or in the mature state. Eggs which were laid in June and July had young emerging in late July and August. Eggs are ivory in color, non-agglutinate and spherical in shape, measuring approximately 0.92 mm. in diameter. The egg sacs are nearly spherical in shape and are made of loosely woven silk which is usually covered with small pieces

of debris. Kaston reports one such egg sac as having measured 7.5 by 8.5 by 7.0 mm., and containing 95 spiderlings. One egg sac was found to contain 56 eggs, and two others contained 85 and 36 spiderlings respectively.

Distribution. Ontario, eastern United States, West Indies.

Records. *Alabama:* Tuscaloosa; Dauphin Island, Mobile; Clear Creek; Cheata State Park; E. of Opelika; *Gallant Co. *Arkansas:* Washington Co. *Connecticut:* Orange; New Haven; Westville; Shelton; Windsor Locks; Branford; North Stamford; South Meriden; Cheshire. *Delaware:* Wilmington. *District of Columbia:* Washington. *Florida:* Liberty Co.; Alachua Co.; Lake Hall, Royal Palm Park; Green Cover Springs; Winter Park. *Georgia:* Okefinokee Swamp; *Burke Co.; *N. of Sylvania; *3 mi. SE. of Savannah; *Lavonia to Toyston; *Demorest; *Clayton to Tallulah Falls. *Illinois:* Gillespie; Bell Smith Springs; West Port; Troy; Collinsville; Saint Anne; *Waukegan Flats. *Indiana:* Valparaiso; *Richmond; *8 mi. S. of Momence; *Smith. *Louisiana:* Grant Par. *Maryland:* Baltimore; Beltsville; Suitland; *Prince Georges Co. *Massachusetts:* Concord; Holliston; *Salem; *Dedham; *Nantucket; *Swampscott; *Brookline; *Clarendon Hills; *Sharon. *Michigan:* Poreupine Mts. *Minnesota:* Minneapolis. *Mississippi:* Lucedale; Leaksville; Hattiesburg. *Nebraska:* *Valentine; *Plattsmouth. *New Hampshire:* Three Mile Isl., Lake Winnepesaukee. *New Jersey:* Ramsey; Lakehurst; Morganville. *New York:* Sloatsburg; Lake Sebago; Interstate Park; Saugerties; Coram, L. I.; *Ithaca; Flushing, L. I.; Mastie, L. I.; Enfield Glen; Lake George; Sterlington; Lake Charlotte; Rockville Center; Oak Ridge; *Canandaigua Lake; Voorheesville; Juanita Island, Lake George; Elizabeth Island; *Shelving Rock; Wappingers Falls; Baiting Hollow, L. I.; *Long Island. *North Carolina:* Raleigh; Bridgewater; Blowing Rock; *Swannanoa Valley; *Oteen. *Ohio:* *Rockbridge; *Columbus. *Rhode Island:* *Providence. *Tennessee:* Montvale; 30 mi. W. of Knoxville; 30 mi. N. of Nashville. *Texas:* Houston; Denton Co.; 12 mi. N. of Temple. *Virginia:* Mountain Lake, Siles Co. *Wisconsin:* Adams Co.; Door Co.; Jackson Co.; Vernon Co.; Washburn Co.; Trempeleau Co.

Ontario: Pointe au Bavi; Point Pelee; Franks Bay, Lake Nipigon; Minaki; Tioncky Point; 3 mi. N. of Wellington; Jones Beach; Mindemoya, Manitoulin Lake.

CLUBIONOIDES KOHLSI (Gertsch and Jellison)

Figures 21, 37, 209

Clubiona kohlsi Gertsch and Jellison, 1939, Amer. Mus. Novitates, no. 1032, p. 10, fig. 3. (♀ type from Hamilton, Ravalli Co., Montana, in the American Museum of Natural History.)

Measurements. Female: Total length, 12.80 mm. Carapace 6.00 mm. long, 4.00 mm. wide. First femur, 3.68 mm.; patella, 1.44 mm.; tibia, 3.20 mm.; metatarsus 2.88 mm.; tarsus 1.44 mm. Fourth femur, 4.00 mm.; patella, 2.08 mm.; tibia, 3.84 mm.; metatarsus, 4.64 mm.; tarsus, 1.76 mm.

Description. Anterior eyes one-half their diameter apart. Posterior median eyes separated by two and a half times their diameter, closer to the larger laterals. Chelicerae robust with four teeth on posterior margin, one nearest base of fang the largest. Carapace reddish brown, chelicerae dark brown, coloration otherwise like other *Clubionoides*. Epigynum illustrated by Figure 37.

Comments. The general structure and coloration indicate a close relationship with *C. tigrina* (Cambridge). The epigynum of *kohlsi* has the free median scape much broader and more rounded than is the case in *tigrina*.

Distribution. This species is known only from a single specimen taken in Montana.

CLUBIONOIDES MULAIKI (Gertsch)

Figures 20, 24-26, 207

Clubiona mulaiki Gertsch, 1935, Amer. Mus. Novitates, no. 805, p. 11, figs. 22-24. (♀ type from 7 mi. E. of Edinburg, Texas, in the American Museum of Natural History.)

Measurements. Female: Length 3.45-5.46 mm.; average 4.26 mm. Carapace 1.98 mm. long, 1.44 mm. wide. First femur, 1.50 mm.; patella, 0.60 mm.; tibia, 1.20 mm.; metatarsus, 0.74 mm.; tarsus, 0.54 mm. Fourth femur, 1.82 mm.; patella, 0.84 mm.; tibia, 1.26 mm.; metatarsus, 1.38 mm.; tarsus, 0.54 mm.

Male: Length 3.18-4.20 mm.; average 3.81 mm. Carapace 2.13 mm. long, 1.50 mm. wide. First femur, 1.70 mm.; patella, 0.83 mm.; tibia, 1.37 mm.; metatarsus, 1.03 mm.; tarsus, 0.63. Fourth femur, 2.10 mm.; patella, 0.83 mm.; tibia, 1.43 mm.; metatarsus, 1.70 mm.; tarsus, 0.53 mm.

Description. Anterior median eyes separated by one-half to almost one diameter, closer to the larger laterals. Posterior medians almost two of their diameter apart, closer to laterals. Chelicerae of female armed with 3 or 4 contiguous teeth on lower margin, those of male with 5 small teeth. Epigynum illustrated by Figure 26, palpus by Figures 24-25.

Comments. The general structure and coloration are in close agreement with *C. dorothea*; only the genitalia differ.

Records. Texas: 7 mi. E. of Edinburg, ♀; Edinburg, ♂; 15 mi. SW. of Harlingen, ♀; Rio Grande City, ♀; Cameron Co., ♂, ♀; 5 mi. NW. of Hidalgo, ♂; 1 mi. NW. of Rio Hondo, ♀, ♂; N. of McCook, ♀.

CLUBIONOIDES TEXANA (Gertsch)

Figures 23, 27-30, 210

Clubiona texana Gertsch, 1933, Amer. Mus. Novitates, no. 637, p. 7, fig. 16 (♀ type from Brownsville, Texas, in the American Museum of Natural History).

Measurements. Female: Length 9.20-11.66 mm.; average 10.07 mm. Carapace 4.64 mm. long, 3.04 mm. wide. First femur, 3.04 mm.; patella, 1.76 mm.; tibia, 2.40 mm.; metatarsus, 2.04 mm.; tarsus, 1.00 mm. Fourth femur, 4.24 mm.; patella, 1.72 mm.; tibia, 2.80 mm.; metatarsus, 3.92 mm.; tarsus, 1.04 mm.

Male: Length 7.60-10.48 mm.; average 8.81 mm. Carapace 4.28 mm. long, 2.84 mm. wide. First femur, 3.36 mm.; patella, 1.60 mm.; tibia, 2.64 mm.; metatarsus, 2.16 mm.; tarsus, 1.08 mm. Fourth femur, 4.00 mm.; patella, 1.52 mm.; tibia, 2.80 mm.; metatarsus, 3.60 mm.; tarsus, 1.12 mm.

Description. Anterior median eyes their radius apart, closer to slightly smaller laterals. Posterior medians twice their diameter apart, closer to laterals. Chelicerae of female armed with 4 teeth, those of male with 5 teeth on lower margin. Epigynum illustrated by Figure 30, palpus by Figures 27-29.

Comments. This species is closest to *C. sericea* (Cambridge).

Distribution. Texas: Laguna Madre, ♂, ♀; N. of McCook, ♂, ♀; Corpus Christi ♀; S. of Pharr, ♀; Edinburg, ♂, ♀ (many records); NW. of Hidalgo, ♀; Rio Grande City, ♂; *Brownsville, ♀.

CLUBIONOIDES DOROTHEA (Gertsch)

Figures 22, 34-36, 208

Clubiona dorothea Gertsch, 1935, Amer. Mus. Novitates, no. 805, p. 12, fig. 25. (♀ type from Edinburg, Texas, in the American Museum of Natural History).

Measurements. Female: Length 3.24-4.32 mm.; average 3.70 mm. Carapace 1.80 mm. long, 1.38 mm. wide. First femur, 1.20 mm.; patella, 0.66 mm.; tibia, 0.84 mm.; metatarsus, 0.72 mm.; tarsus, 0.42 mm. Fourth femur, 1.74 mm.; patella, 0.63 mm.; tibia, 1.14 mm.; metatarsus, 1.41 mm.; tarsus, 0.39 mm.

Male: Length 4.14-4.74 mm.; average 4.50 mm. Carapace 2.10 mm. long, 1.50 mm. wide. First femur, 1.50 mm.; patella, 0.70 mm.; tibia, 1.20 mm.; metatarsus, 0.78 mm.; tarsus, 0.42 mm. Fourth femur, 1.82 mm.; patella, 0.75 mm.; tibia, 1.28 mm.; metatarsus, 1.71 mm.; tarsus, 0.48 mm.

Description. Anterior median eyes separated by three-fourths their diameter, closer to the larger, oval laterals. Posterior medians two diameters apart, closer to the slightly larger laterals. Chelicerae with 3 teeth on lower margin in female, with two contiguous teeth in male.

Comments. The pale palpus (Figs. 34-35) resembles *C. mukaii*; the epigynum (Fig. 36) is very distinct.

Records. Texas: *Edinburg, ♀; S. of Pharr, ♂, ♀ (sev. collections).

CLUBIONA Latreille

Clubiona Latreille, 1804, Nouv. Dict. Hist. Nat., vol. 24, p. 134. Type species: *Clubiona pallidula* (Clerck).

Elaver Cambridge, 1898, Biologia Centrali Americana, Araneidea, vol. 1, p. 238. Type species: *Elaver tigrina* Cambridge.

Description. Small or medium size, usually pale or tawny with darker brown coloration at the anterior end of carapace and on chelicerae. Abdomen clothed with silky white or pale yellow pubescent hairs which give it a soft silky appearance without hiding color of surface. Most are without distinct markings, although a few have abdomen marked with a median stripe or with a series of posteriorly directed chevrons.

Carapace wide in front, especially in females. Thoracic groove present. Posterior row of eyes wider than anterior row; eyes of

posterior row nearly equidistant, or medians farther from each other than from laterals. Chelicerae of females usually robust and swollen at base. Males, chelicerae generally longer, attenuated, sometimes with keels along antero-median face, lateral face, or both. Lower margin of furrow of chelicerae armed with two to five teeth, although number is variable even in same species. Upper margin of furrow of chelicerae usually with five teeth, but number may vary from three to six. Posterior pair of legs longer than first pair; all tarsi armed with pair of long claws. First two tibiae and metatarsi with paired spines beneath (see comparisons in preceding genus); usually two pairs but sometimes one beneath tibia, and a single pair beneath metatarsus. Abdomen truncated at base, tapering behind.

Natural History. These spiders live in flat tubular nests of silk, with an opening at either end, which they spin under bark or stones or in rolled leaves. Most species are sedentary in habit.

Misplaced and doubtful species: Species misplaced in *Clubiona* and not now in genera revised in this paper are: *C. albens* Hentz (*Anyphaenella*); *C. celer* Hentz (*Anyphaena*); *C. fallens* Hentz (*Anyphaena*); *C. gracilis* Hentz (*Aysha*); *C. sublurida* Hentz (*Anyphaena*); *C. tranquilla* Hentz (*Trachelas*); *Clubiona immatura* Hentz is not recognizable, the types having been lost. *Clubiona frigidula* Thorell described from Labrador cannot be recognized; the deposition of the type is not known.

Comments. In this paper, the genus *Clubiona* is divided into four groups. Groups I-III are made up of species the details of whose genitalia indicate that they form natural units. Group IV is set up as a convenience, containing two species which do not appear to be closely related, either between themselves or with members of the first three groups. Group I is further divided into two divisions.

Group I: Males with single heavy retrolateral carpopoblem on tibia of palpus. The relatively short embolus lies in a shallow groove on median division of tegulum. Females of Group I have epigyna which are usually broader than long, oval or rounded sperm duct openings being either lateral in position near posterior edge of epigynum, or else ducts open by a common opening which is medial in position at posterior edge of epigynum. In *C. mimula*, the sperm duct openings are separate, although close

together near midline at posterior edge of epigynum. Females of this species are readily distinguished from those of Group III since the sperm ducts travel directly back to the openings instead of curving around near lateral edges of epigynum. Division A: *C. moesta*, *C. pygmaca*, *C. trivialis*, *C. janae*. Division B: *C. praematura*, *C. furcata*, *C. obesa*, *C. mixta*, *C. chip-pewa*, *C. bryantae*, *C. mimula*, *C. spiralis*, *C. rileyi*).

Group II. Darker in color than other groups; dorsum of abdomen marked by characteristic patterns. Retrolateral apophysis of tibia of male palpus with two or three divisions; the ventral division always longest, sharply pointed distally, and with a notch on dorsal edge at varying distances from tip. Embolus, unlike other species of *Clubiona*, has tip extending distally and not curving toward base of palp and lying in a groove on tegulum. Epigyna of females broader than long, and sperm duct openings usually obscured by posterior edge of epigynum. (*C. canadensis*, *C. californica*, *C. norvegica*, *C. kulczynskii*.)

Group III. With broad pars cephalica; posterior eyes farther apart; ocular quadrangle much broader than high, usually greatly narrowed in front; species small. This group is quite readily separated from other species of *Clubiona* by characteristics of the genitalia.

Male palpus with long, shallow groove on median division of tegulum in which the thin embolus lies. Two elements make up distal division of embolic portion of palpus: the embolus, and a characteristic well-developed distal apophysis. Distal apophysis is a fold covering basal portion of embolus where it is attached, expanding to a point near or even beyond middle of the tegulum. The apophysis is expanded into a conspicuous lobe distally on prolateral side. Inner portion of distal division of embolus in a few species is also expanded into a distinct apophysis (*C. abbotii*, *C. newnani*, and *C. adjacens*). Tibia of male palpus with two strong apophyses which are very close together, sometimes overlapping. One apophysis retrolateral, the other nearly dorsal or dorso-retrolateral.

Epigyna of females very similar, all longer than broad; the oval or spherical sperm duct openings usually located close together near notched posterior edge. Sperm receptacles located anteriorly, sperm ducts curving laterally near edge of epigynum

to sperm duct openings. (*C. abbotii*, *C. adjacens*, *C. alachua*, *C. bishopi*, *C. catawba*, *C. dyasia*, *C. estes*, *C. gertschi*, *C. johnsoni*, *C. kagani*, *C. kastoni*, *C. kiowa*, *C. littoralis*, *C. mutata*, *C. newnani*, *C. nicholsi*, *C. odelli*, *C. oteroana*, *C. pikei*, *C. plumbi*, *C. pomoa*, *C. procteri*, *C. rhododendri*, *C. saltitans*).

Group IV. The two species placed in this group are not closely related, however they differ from the preceding groups. (*C. maritima*, *C. riparia*.)

Key to males of *Clubiona*

1. Tibia of palpus with a single, relatively simple, heavy retrolateral apophysis Group I
1. Tibia with two or more apophyses 2
2. Two simple tibial apophyses very close together, relatively heavy; bulb of palpus with a cusp-like distal division of embolus; tegulum with a long, shallow groove in which lies the long, thin embolus Group III
2. Tibial apophyses not very close together; distal division of embolus without a cusp-like apophysis 3
3. Tibial apophyses consisting of a short dorsal element and a longer ventral element and with a median element in some forms, the ventral element always sharply pointed distally and notched (as in Fig. 150); embolus short and directed distally, not lying in a shallow groove on the tegulum Group II
3. Male palpus not as above Group IV

Group I

1. Tibial apophysis of palpus spatulate and very simple, without notches and processes (Division A) 2
1. Tibial apophysis not spatulate, with notches, hooks on processes (Division B) 4
2. Carpoblem broad and truncate (Fig. 99) *C. moesta*
2. Carpoblem with distal point gently rounded (Figs. 97, 101) 3
3. Distal division of embolic portion of palpus with three small dark distal lobes (Fig. 102) *C. trivialis*
3. Distal division of embolic portion without any distal lobes (Fig. 98) *C. pygmaea*
4. Carpoblem with a dorsal division and a ventral division 5
4. Carpoblem a single stout process 6
5. Tibial apophysis of palpus with a heavy notched ventral division and a thin pointed dorsal division (Fig. 111) *C. spiralis*

5. Tibial apophysis with both divisions sharply pointed and turned in same direction toward tarsus (Fig. 114-115) *C. bryantae*
6. Carpoblem terminating in a hook turned toward tarsus 8
6. Carpoblem not terminating in a hook turned toward tarsus 7
7. Carpoblem with a ventral, distally projected narrow finger-like process; carpoblem relatively thin as seen in ventral view (Figs. 103-104) *C. mimula*
7. Carpoblem thick as seen in ventral view and with a short, narrow, dorsally projected ectal process (Figs. 116-118) *C. chippewa*
8. Carpoblem longer than broad as seen from the side 9
8. Carpoblem broader than long and with a long, sharp, prolaterally directed process as seen in dorsal view (Figs. 105-106, 124) *C. praematura*
9. Carpoblem terminating in a single point 10
9. Carpoblem terminating dorsally in two short points (Figs. 109-110) *C. furcata*
10. Carpoblem as seen from the side deeply notched just below tip; embolus shorter (Figs. 119-120) *C. mixta*
10. Carpoblem as seen from the side gently curved dorsally and not deeply notched; embolus longer (Figs. 121-123) *C. obesa*

Group II

1. Tibial apophysis of palpus with only two distinct divisions 2
1. Tibial apophysis with a distinct bluntly rounded median division (Fig. 149) *C. kulczynskii*
2. Tibial apophysis with dorsal and ventral divisions extended ventrally; ventral division very much longer than dorsal (Fig. 146) *C. norvegica*
2. The two divisions of tibial apophysis extended distally; ventral division at most slightly more than twice as long as dorsal division 3
3. Ventral division of tibial apophysis at least twice as long as dorsal division and much heavier than dorsal division (Fig. 150) *C. canadensis*
3. Ventral division of tibial apophysis less than twice as long as dorsal division and about as narrow as dorsal division (Fig. 152) *C. californica*

Group III

1. Retrolateral tibial apophysis bifid (Fig. 74) *C. dyasia*
1. Retrolateral tibial apophysis not bifid 2
2. Embolus with an enlargement near base 3
2. Embolus without enlargement near base 4

3. Dorsal and retrolateral tibial apophyses nearly the same length (Figs. 68, 69) *C. nicholsi*
3. Retrolateral tibial apophysis much longer than dorsal (Fig. 72) *C. pomoa*
4. Retrolateral tibial apophysis essentially straight, without an enlargement at base of apex (Fig. 76) *C. catawba*
4. Retrolateral tibial apophysis curved or with an enlargement at base of apex 5
5. Retrolateral tibial apophysis with an enlargement at apex (Fig. 54) ... *C. adjacens*
5. Retrolateral tibial apophysis without an apical enlargement 6
6. Chelicerae very robust and protruding; posterior eyes widely separated *C. littoralis*
6. Chelicerae normal, not protruding; posterior eyes not as widely separated 7
7. Distal half of retrolateral tibial apophysis bent sharply dorsad (Fig. 66) *C. procteri*
7. Distal half of retrolateral apophysis not bent sharply dorsad 8
8. Retrolateral tibial apophysis distinctly longer than dorsal apophysis . 9
8. Retrolateral tibial apophysis at most but slightly longer than dorsal apophysis 13
9. Chelicerae with distinct ridges above; dorsal tibial apophysis broad and truncate (Fig. 58) *C. saltitans*
9. Chelicerae without ridges above; dorsal tibial apophysis not as broad 10
10. Dorsal tibial apophysis terminating in a ventrally directed point (Fig. 64) *C. mutata*
10. Dorsal tibial apophysis not as in *C. mutata* 11
11. Retrolateral tibial apophysis with a truncate apex (Fig. 62) *C. kioua*
11. Retrolateral tibial apophysis thinner, apex pointed 12
12. Posterior median eyes separated by one and a half times the diameter of one of them *C. plumbi*
12. Posterior median eyes separated by more than twice the diameter of one of them *C. pikei*
13. Distal apophysis of the embolic portion of bulb with inner fold produced into a distinct spur 18
13. Distal apophysis of embolic portion of bulb without distinct spur produced from inner fold 14
14. Apex of retrolateral tibial apophysis produced into a sharp, ventrally curved point (Fig. 50) *C. gertschi*
14. Apex of the retrolateral tibial apophysis not pointed 15
15. Apex of the dorsal tibial apophysis bluntly rounded (Fig. 40) *C. bishopi*

15. Apex of the dorsal tibial apophysis pointed 16
16. Dorsal tibial apophysis at most no longer than ventral apophysis;
embolus comparatively long 17
16. Dorsal tibial apophysis somewhat longer than ventral; embolus com-
paratively short (Fig. 39) *C. rhododendri*
17. Retrolateral tibial apophysis about as long as its width at the base
(Fig. 46) *C. kastoni*
17. Retrolateral tibial apophysis considerably longer than its width at
the base (Fig. 48) *C. johnsoni*
18. Retrolateral tibial apophysis longer than broad 19
18. Retrolateral tibial apophysis about as long as broad (Fig. 52)
C. newnani
19. Dorsal point of the apex of the retrolateral tibial apophysis longer
than the ventral point; retrolateral apophysis widest at the base
(Fig. 42) *C. abbotii abbotii*
19. Dorsal point of the apex of the retrolateral tibial apophysis no longer
than ventral point; retrolateral apophysis widest at middle (Fig. 45)
C. abbotii abbotoides

Group IV

1. Tibial apophysis of palpus mainly dorsal in position, very heavy and
complex; the very long thin embolus lying in a shallow groove on
tegulum (Figs. 132-133) *C. maritima*
1. The comparatively small retrolateral tibial apophysis with two divi-
sions; the spiraled embolus enclosed in a heavy conductor and not
lying in a groove on tegulum (Figs. 125, 127) *C. riparia*

Key to females (except C. rhododendri)

A short immersion in clove oil may be necessary to reveal the internal characters of some species. Individual variation in different species is very great, thus individual specimens may at times not key out.

1. Epigynum with openings not visible or with paired openings three or
more diameters apart 6
1. Epigynum with one median opening or paired openings close together,
two diameters or less apart 2
2. Openings hidden by a transverse dark mark, which may be broken
(Figs. 143, 212) *C. spiralis*
2. Openings otherwise 3

3. Epigynum with openings in an indistinct depression which is divided by a posterior pointing septum; sides of depression white in color; (Figs. 145, 219); size 5-10 mm. *C. riparia*
3. Epigynum otherwise, mostly smaller species 4
4. Epigynum with a single median opening 16
4. Epigynum with two separate openings 5
5. Openings separated by a V-shaped division, a pair of depressions anterior to openings (Figs. 138, 229) *C. mimula*
5. Epigynum otherwise *abbottii* group
6. Less than 3 mm. long, one central opening present (Fig. 244), but difficult to discern *C. catawba*
6. More than 3.5 mm. long 7
7. Openings visible as slits or depressions in a plate 11
7. Openings on the posterior margin of a plate 8
8. Epigynum covering most of width of abdomen, openings far apart (Figs. 139, 214) *C. maritima*
8. Epigynum not exceptionally wide, openings relatively close together . . 9
9. Epigynum with a posterior median notch, margin sclerotized (Figs. 156, 215) *C. norvegica*
9. Epigynum with margin not sclerotized 10
10. Epigynum with a characteristic median darker raised area which is narrower anteriorly (Figs. 155, 216) *C. canadensis*
10. Epigynum with a median posterior lobe (Figs. 158, 217 and 153, 218) *C. kulczynskii, C. californica*
11. Openings connected to margin (Figs. 157, 213 and 214) *C. rileyi, C. maritima*
11. Openings not touching margin 12
12. Openings indistinct slits (Figs. 161, 220) *C. furcata*
12. Openings circular on oval depression 13
13. Openings minute, several diameters from margin (Figs. 137, 221) *C. bryantae*
13. Openings, their diameter or less from posterior margin 14
14. Openings more than 10 diameters apart, or if less, posterior receptacles more than their length from margin (Figs. 136, 222); eastern mountain summits *C. praematura*
14. Openings less than 8 diameters apart, oval in shape; posterior receptacles close to posterior margin, visible without clearing 15
15. Indentation in posterior margin as wide as length of 3 openings, posterior receptacles small, about their length from openings (Figs. 141, 223) *C. mixta*
15. Indentation in posterior margin less than length of two openings; posterior receptacles large, less than their length from openings (Figs. 140, 224) *C. obesa*

16. Depression bordered all around or ducts running parallel entering opening from anterior (Figs. 225-228) (if posterior margin missing, seminal receptacles in two rows forming square, Fig. 226; if only lateral margins present, receptacles in one line (Fig. 228) 17
16. Depression not bordered all around, ducts entering at sides or at a 45 degree angle, usually less than 5 mm. long, rarely more than 6 mm. Not like Figures 144, 226, 228 *abbottii* group
17. Seminal receptacles in one row (Figs. 134, 227 and 144, 228) *C. janae*, *C. moesta*
17. Seminal receptacles in two rows 18
18. Anterior receptacles about their diameter from posterior margin of plate (Figs. 135, 226) *C. pygmaea*
18. Anterior receptacles more than their diameter from posterior margin (Figs. 142, 225) *C. trivialis*

Key to females of *abbottii* group (Group III)

1. Openings their radius or more from end of lobe, area around openings sclerotized (Figs. 79, 82, 83, 231, 236) 2
1. Openings closer to margin 3
2. Margin flaring out in two large lobes (Figs. 82, 231); Colorado *C. odelli*
2. Lobes not flared (Figs. 79, 83, 236) *C. abbotii*
3. Opening without septum, very difficult to see, a pair of black transverse patches visible (Figs. 92, 244); usually less than 3 mm. long, eastern United States *C. catawba*
3. Openings visible (after removing hairs) 4
4. Receptacles in one row, or median ones slightly anterior (Figs. 93, 239 and 94, 238); southwestern states, California *C. poma*, *C. oteroana*
4. Receptacles in two rows, or median ones posterior to laterals 5
5. Posterior border of median receptacles forming a straight line (Fig. 235); Lake states, New England *C. johnsoni*
5. Posterior border of median receptacles not forming a straight line 6
6. Anterior receptacles more than twice as long as wide, openings more than 3 times as long as wide (Figs. 88, 240); southeastern states *C. procteri*
6. Receptacles or openings otherwise 7
7. Openings joined, the anterior margin of each side pointing anterior and becoming parallel (Figs. 86, 234) *C. opeonga*
7. Openings otherwise 8
8. Epigynum sclerotized, ducts with 2 right angles (Figs. 84, 232); eastern mountain summits *C. gertschi*

8. Ducts lacking angles, usually not on mountain summits 9
9. Ducts approaching openings in a V-shape, lacking elbows; anterior receptacles longer than wide, with their axes at right angles (Figs. 81, 233) widespread *C. kastoni*
9. Ducts either having a slight angle or strongly curved 10
10. Openings joined, depression having an anterior median lobe (Fig. 87, 242); Atlantic coast states *C. littoralis*
10. Openings not joined, or if joined not having an anterior lobe 11
11. Anterior receptacles at least twice as long as wide, hiding posterior receptacles, a pair of transverse black marks on epigynum (Figs. 89, 243) and posterior median eyes only two diameters apart; Texas *C. kagani*
11. Anterior receptacles otherwise or eyes farther apart 12
12. Anterior receptacles at least twice as long as wide and ducts having an angle (Figs. 85, 241). Atlantic coast states, probably found only in beach vicinity *C. nicholsi*
12. Anterior receptacles or ducts otherwise 13
13. Ducts with slight angles, area between ducts less than twice the width of combined openings (Figs. 90, 245); posterior median eyes only two diameters apart; probably eastern states *C. kiowa*
13. Ducts otherwise 14
14. Openings two parallel grooves, more than twice as long as wide (Fig. 248); posterior median eyes only two diameters apart; Atlantic coast states on shore; doubtful on shore of Gt. Lakes *C. saltitans*
14. Openings more rounded or eyes farther apart 15
15. Posterior median eyes two diameters or less apart; Atlantic coast states in dune grass; (Genitalia Figs. 95, 250) *C. plumbi*
15. Posterior median eyes about three diameters apart 16
16. Area surrounded by ducts about three diameters the combined width of openings (Fig. 249). Atlantic coast states *C. pikei*
16. Area surrounded by ducts about two diameters combined width of openings 17
17. Size 2.4-3.8 mm. long, widespread *C. mutata*
17. Size 4 mm. long, Colorado *C. cstes*

CLUBIONA TRIVIALIS C. Koch

Figures 101-102, 142, 170, 225

Clubiona trivialis C. Koch, 1843, Die Arachniden, vol. 10, p. 132, figs. 844-845 (Types from southern Germany). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 502. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1161.

Clubiona obtusa Emerton, 1915, Trans. Connecticut Acad. Sci., vol. 20, p. 153, pl. 3, fig. 4 (δ and ♀ syntypes from Banff, Canada, in the Museum of Comparative Zoology). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 516. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1138. NEW SYNONYMY.

Measurements. Female. Length 3.18-5.34 mm.; average 4.15 mm. Carapace 1.74 mm. long, 1.14 mm. wide. First femur, 1.20 mm.; patella, 0.60 mm.; tibia, 0.96 mm.; metatarsus, 0.68 mm.; tarsus, 0.42 mm. Fourth femur, 1.44 mm.; patella, 0.54 mm.; tibia, 1.14 mm.; metatarsus, 1.26 mm.; tarsus, 0.46 mm.

Male. Length 3.00-4.26 mm.; average 3.55 mm. Carapace 1.40 mm. long, 0.96 mm. wide. First femur, 1.08 mm.; patella, 0.48 mm.; tibia, 0.96 mm.; metatarsus, 0.66 mm.; tarsus, 0.42 mm. Fourth femur, 1.38 mm.; patella, 0.51 mm.; tibia, 1.00 mm.; metatarsus, 1.08 mm.; tarsus, 0.42 mm.

Description. Anterior median eyes their radius apart, half as far from laterals. Posterior medians separated by three diameters, two diameters from laterals in female, slightly closer in male. Epigynum and palpus (Figs. 101-102) separate it from *C. pygmaea*.

Natural History. This species has been collected from grass and bushes along a beach, from under bark and in ground debris.

Distribution. Common in northern Europe and the British Isles, southern Canada, northern United States, in the West south to Arizona.

Records. *Arizona:* Scotsdale, δ . *Maine:* Bass Harbor, δ ; Eastbrook, δ . *Michigan:* *Wilderness Park, δ . *New York:* Brittons, δ ; Little Pond, Orange Co., δ , ♀ . *Washington:* Friday Harbor, ♀ . *Wisconsin:* Manitowoc Co., ♀ . *Wyoming:* Bridge Bay, Yellowstone Natl. Pk., δ , ♀ .

Alberta: *Banff, δ , ♀ ; Carthew Lk., Waterton Natl. Pk., ♀ , δ . *British Columbia:* Manning Park, δ ; Ross Lk., Yoho Natl. Pk., ♀ . *Labrador:* ♀ . *Newfoundland:* St. Fintans, ♀ . *Ontario:* Smoky Falls, Mattagami River, ♀ ; Providence Bay, Manitoulin Isl., δ , ♀ ; 8 mi. N. of Temagami, ♀ ; Fort Severn, ♀ . *Saskatchewan:* Wallaston Lake, δ , ♀ .

CLUBIONA PYGMAEA Banks

Figures 97-98, 135, 173, 226

Clubiona minuta Emerton, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 121, pl. 5, fig. 4 (δ type from Readville, Massachusetts, in the Museum of Comparative Zoology). Name preoccupied by *C. minuta* Nicolet.

Clubiona pygmaea Banks, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 21, pl. 1, fig. 64 (♀ type from Fall Creek, Ithaca, New York, in the Museum of Comparative Zoology). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 516. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1148.

Clubiona minutissima Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 461. New name for *C. minuta* Emerton, preoccupied. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1135.

Clubiona lenta Banks, 1916, Proc. Acad. Nat. Sci. Philadelphia, p. 69 (♀ type from Fall Creek, Ithaca, New York, in the Museum of Comparative Zoology).

Measurements. Female. Length 2.94-4.02 mm.; average 3.43 mm. Carapace 1.56 mm. long, 1.08 mm. wide. First femur, 1.08 mm.; patella, 0.48 mm.; tibia, 0.78 mm.; metatarsus, 0.57 mm.; tarsus, 0.36 mm. Fourth femur, 1.32 mm.; patella, 0.54 mm.; tibia, 0.99 mm.; metatarsus, 1.08 mm.; tarsus, 0.39 mm.

Male. Length 2.70-3.78 mm.; average 3.07 mm. Carapace 1.35 mm. long, 0.96 mm. wide. First femur, 0.86 mm.; patella, 0.42 mm.; tibia, 0.72 mm.; metatarsus, 0.60 mm.; tarsus, 0.30 mm. Fourth femur, 1.08 mm.; patella, 0.42 mm.; tibia, 0.80 mm.; metatarsus, 0.84 mm.; tarsus, 0.36 mm.

Description. Anterior median eyes two-thirds to one diameter apart, half that distance from laterals. Posterior medians three diameters apart, half as far from laterals. Epigynum illustrated by Figure 135, palpus by Figures 97-98.

Natural History. This species has been collected on tall marsh grass and from low bushes.

Distribution. Southeastern Canada, eastern United States, as far west as Colorado.

Records. *Colorado:* Denver. *Connecticut:* Norwalk; *Amston; *New Haven; *North Haven; *Simsbury; *South Meriden. *District of Columbia.* *Florida:* St. Petersburg; Kenka; Marianna; Eustis. *Illinois:* Nr. Chicago; Urbana. *Indiana:* Vawter Park; Arlington. *Maine:* *Portland. *Maryland:* *Prince Georges Co. *Massachusetts:* Sharon; *Readville; Wellfleet. *Michigan:* Quincy.

Mississippi: Humphreys Co. *New Jersey*: Ramsey. *New York*: Sea Cliff, L. I.; Cold Spring Harbor, L. I.; Ithaca; Yonkers; Beaver River Flow; Mendon Ponds, Monroe Co.; Enfield Glen; West Kilns. *North Carolina*: Canton. *Ohio*: Gambler; *Columbus; *Delaware; *Rockbridge. *Texas*: Edinburg. *Virginia*: Falls Church. *West Virginia*: Aurora. *Wisconsin*: Madison.
Ontario: Humber, Toronto; Newmarket. *Quebec*.

CLUBIONA MOESTA Banks

Figures 99-100, 130, 144, 228

Clubiona pusilla Emerton, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 181-182, pl. 15, fig. 5 (δ types from Salem, Massachusetts, in the Museum of Comparative Zoology). Name preoccupied by *C. pusilla* Nicolet.

Clubiona moesta Banks, 1896, Trans. Amer. Ent. Soc., vol. 23, p. 64 (δ and ♀ syntypes from Chicago, Illinois, in the Museum of Comparative Zoology). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 515.

Clubiona emertoni Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 460. New name for *C. pusilla* Emerton, preoccupied.

Clubiona orinoma Chamberlin, 1919, Ann. Ent. Soc. Amer., vol. 12, p. 225, pl. 14, fig. 4 (♀ type from Chalk Creek, Uintah Mts., Utah, in the Museum of Comparative Zoology).

Clubiona maesta, Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1133.

Measurements. Female. Length 4.32-6.48 mm.; average 5.42 mm. Carapace 2.32 mm. long, 1.76 mm. wide. First femur, 1.60 mm.; patella, 0.76 mm.; tibia, 1.28 mm.; metatarsus, 0.84 mm.; tarsus, 0.52 mm. Fourth femur, 2.00 mm.; patella, 0.80 mm.; tibia, 1.36 mm.; metatarsus, 1.69 mm.; tarsus, 0.52 mm.

Male. Length 3.68-6.00 mm.; average, 4.84 mm. Carapace 2.24 mm. long, 1.62 mm. wide. First femur, 1.68 mm.; patella, 0.72 mm.; tibia, 1.41 mm.; metatarsus, 1.02 mm.; tarsus, 0.57 mm. Fourth femur, 1.86 mm.; patella, 0.72 mm.; tibia, 1.32 mm.; metatarsus, 1.62 mm.; tarsus, 0.54 mm.

Description. Anterior eyes separated by their radius in female, by their diameter in male. Posterior medians separated by three diameters, one diameter from laterals. In the female the chelicerae are stout, in the male attenuated with their anterior surfaces concave. Epigynum illustrated by Figure 144, palpus by Figures 99-100.

Natural History. This species is very common under bark of standing aspen in the West.

Distribution. Northern United States to Alaska.

Records. *Colorado:* Fort Collins; Gunnison Co.; La Plata Co. *Connecticut:* Black Hall. *Idaho:* Thousand Springs; Crow Creek. *Illinois:* Chicago. *Maine:* Mount Desert Isl. *Massachusetts:* Saugus; Holliston; *Salem; *Beverly. *Michigan:* *Southern Peninsula. *Minnesota:* Minneapolis; Itasca Park. *Montana:* Beaverhead Co.; Ravalli Co. *Nebraska:* *Lincoln. *New Hampshire:* 3 Mile Island, Lake Winnepesaukee. *New York:* Juanita Isl., Lake George; Lake Bluff; Freeville; Little Pond, Orange Co.; Long Isl.; McLean; Hunter; Labrador Pond, Cortland Co.; Oswego; Lotus Point; Adirondack Lodge; Honeoye Falls. *Oregon:* Eugene; Scappoose; Portland. *Pennsylvania:* *Western part. *South Dakota:* Grizzly Bear Cr., Black Hills. *Utah:* Salt Lake City; Rear Lake; *Chalk Creek, Raft River Mtns.; *Clear Cr., Raft River Mtns.; *South fork of the Raft River; *Dove Creek, Raft River Mtns.; *Park Valley. *Wisconsin:* Manitowoc Co. *Wyoming:* Mount Afton.

Alaska: *College.

Manitoba: Le Pas. *Ontario:* Port Credit; Toronto; Wellington; Haliburton; Long Point; Elmhurst Beach; Huyks Bay; Little Vermillion Lake; High Park, Toronto; Garrott Island; Pieton; Mindemoya, Manitoulin Lake; Providence Bay, Manitoulin Lake; Hogs Hollow, Toronto; Beamsville; Lake Opeonga, Algonquin Park; Point Pelee. *Saskatchewan:* Lac La Rouge.

CLUBIONA JANAE, new species

Figures 134, 177, 227

Type. Female holotype from Pilarcitas Creek, San Mateo County, California, April 27, 1947 (W. Tilden), in the American Museum of Natural History.

Measurements. Female. Total length 6.30 mm. Carapace 2.64 mm. long, 1.80 mm. wide. Abdomen 3.84 mm. long, 2.40 mm. wide. First femur, 1.38 mm.; patella, 0.60 mm.; tibia, 1.08 mm.; metatarsus, 0.84 mm.; tarsus, 0.48 mm. Fourth femur, 1.74 mm.; patella, 0.68 mm.; tibia, 1.50 mm.; metatarsus, 1.78 mm.; tarsus, 0.56 mm.

Description. Anterior median eyes separated by nearly the diameter of one, nearer the equal laterals. Posterior medians separated by two and a half diameters of one, nearer the slightly sub-equal laterals. Chelicerae armed with two small teeth on lower margin.

Carapace light brown, unmarked except for dark median groove and black rings surrounding the eyes. Sternum light yellow, margined by darker yellow-brown, and with dark spots at margin in regions of coxae. Chelicerae reddish-brown. Endites and labium light brown except for the lighter distal margin of the labium. Coxae light yellow-brown, legs slightly darker. First and second tibia with a mid-ventral heavy band of long hairs on the distal half and two ventro-lateral bands extending the length of the tibia. Dorsum of abdomen light yellow-brown with a red-brown stripe and five or six indistinct posteriorly directed chevrons, darker red-brown behind. Venter of abdomen light yellow-brown and clothed in same manner as dorsum.

Diagnosis. Epigynum (Fig. 134) much like that of *C. trivialis*. Details of it distinguish it from the latter species.

Record. *California:* Berkeley, ♀ paratype, Dec. 1919 (H. Dietrich), in the Cornell Univ. Collection.

CLUBIONA FURCATA Emerton

Figures 108-110, 161-162, 220

Clubiona furcata Emerton, 1917, Canadian Ent., vol. 49, p. 107, pl. 7, fig. 8 (♂ type from Saskatoon, Saskatchewan, lost).

Clubiona rowani Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 17, fig. 13 (♀ type from Seba, Alberta, in the American Museum of Natural History). NEW SYNONYMY.

Measurements. Female: length 4.07 mm. Carapace 1.86 mm. long, 1.32 mm. wide. First femur, 1.14 mm.; patella, 0.54 mm.; tibia, 1.08 mm.; metatarsus, 0.72 mm.; tarsus, 0.48 mm. Fourth femur, 1.62 mm.; patella, 0.56 mm.; tibia, 1.26 mm.; metatarsus, 1.35 mm.; tarsus, 0.50 mm.

Male: Length, 3.88 mm. Carapace 1.76 mm. long, 1.33 mm. wide.

Description. Anterior median eyes two-thirds diameter apart, closer to laterals. Posterior medians separated by two diameters, closer to laterals. Epigynum illustrated by Figure 161, palpus by Figures 108-110.

Records. *Utah:* Lakota Beach, Bear Lake, ♂ (W. J. Gertsch). *Alberta:* Lac la Rouge; Seba Beach. *Manitoba:* Birtle.

CLUBIONA PRAEMATURA Emerton

Figures 105, 106-107, 124, 136, 222

Clubiona praematura Emerton, 1909, Trans. Connecticut Acad. Sci., vol. 14, p. 219, pl. 10, fig. 7 (♂, ♀ syntypes from summit of Mt. Washington, New Hampshire, in the Museum of Comparative Zoology). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 516. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1147.

Measurements. Female. Length 4.86-6.84 mm.; average 5.73 mm. Carapace 2.40 mm. long, 1.63 mm. wide. First femur, 1.33 mm.; patella, 0.77 mm.; tibia, 1.07 mm.; metatarsus, 0.80 mm.; tarsus, 0.60 mm. Fourth femur, 1.73 mm.; patella, 0.80 mm.; tibia, 1.33 mm.; metatarsus, 1.67 mm.; tarsus, 0.63 mm.

Male. Length, 4.38-5.04 mm.; average, 4.75 mm. Carapace 2.13 mm. long, 1.50 mm. wide. First femur, 1.32 mm.; patella, 0.72 mm.; tibia, 1.20 mm.; metatarsus, 0.84 mm.; tarsus, 0.57 mm. Fourth femur, 1.68 mm.; patella, 0.78 mm.; tibia, 1.44 mm.; metatarsus, 1.68 mm.; tarsus, 0.66 mm.

Description. Anterior median eyes separated by two-thirds diameter in female, by radius in male, closer to laterals. Posterior medians more than two diameters apart in female, one and one-half in male, closer to laterals. Epigynum illustrated by Figure 136, palpus by Figures 105-107, 124.

Natural History. This species has been collected from under stones and in ground debris.

Distribution. Eastern mountain tops, Canada, Alaska.

Records. *Kentucky:* Tableland Mtn., ♂, ♀. *Maine:* Mt. Katahdin summit, ♂, ♀. *New Hampshire:* Mt. Washington, ♂, ♀. *Alaska:* Eklutna, ♀; Eklutna Flats, ♀; Anaktuvuk Pass, ♀. *Mackenzie:* Ft. Resolution, Great Slave Lake, ♀.

CLUBIONA MIMULA Chamberlin

Figures 103-104, 129, 138, 178, 229

Clubiona mimula Chamberlin, in Chamberlin and Gertsch, 1928, Proc. Biol. Soc. Washington, vol. 41, p. 184 (♂ type from Fruita, Wayne Co., Utah, in the University of Utah collection). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 515. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1135.

Measurements. Female. Length 4.86-6.00 mm.; average 5.36 mm. Carapace 2.37 mm. long, 1.62 mm. wide. First femur, 1.28 mm.; patella, 0.68 mm.; tibia, 0.99 mm.; metatarsus, 0.72 mm.; tarsus, 0.50 mm. Fourth femur, 1.86 mm.; patella 0.72 mm.; tibia, 1.32 mm.; metatarsus, 1.59 mm.; tarsus, 0.54 mm.

Male. Length 4.20-5.22 mm.; average 4.65 mm. Carapace 2.16 mm. long, 1.38 mm. wide. First femur, 1.56 mm.; patella, 0.75 mm.; tibia, 1.32 mm.; metatarsus, 0.96 mm.; tarsus, 0.54 mm. Fourth femur, 2.01 mm.; patella, 0.78 mm.; tibia, 1.38 mm.; metatarsus, 1.68 mm.; tarsus, 0.60 mm.

Description. Anterior median eyes separated by three-quarters diameter in female, by radius in male, closer to laterals. Posterior medians separated by two and a half diameters in female, by two diameters in male, closer to laterals. Epigynum illustrated by Figure 138, palpus by Figures 103-104. The sperm ducts (Fig. 229) go directly back to the openings, not curving as they do in the *C. abbotii* group.

Records. California: Lake Tahoe, ♀, ♂; Yosemite Falls, ♂. Idaho: Snake River; Ferncroft. Oregon: Spencer Butte, ♂. Utah: Beaver Canyon, ♂, ♀; *Clear Creek, Raft River Mtns., ♂, ♀.

CLUBIONA CHIPPEWA Gertsch

Figures 116-118

Clubiona chippewa Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 16, figs. 50-51 (♂ type from St. Croix Falls, Wisconsin, in the American Museum of Natural History). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 514.

Measurements. Male. Length 4.50 mm. Carapace 2.10 mm. long, 1.44 mm. wide. First femur, 1.98 mm.; patella, 0.81 mm.; tibia, 1.83 mm.; metatarsus, 1.26 mm.; tarsus, 0.81 mm. Fourth femur, 2.40 mm.; patella, 0.78 mm.; tibia, 1.86 mm.; metatarsus, 2.55 mm.; tarsus, 0.75 mm.

Description. Anterior median eyes separated by two-thirds diameter, closer to slightly larger laterals. Posterior medians two diameters apart, closer to laterals. Palpus illustrated by Figures 116-118. The female is not known.

Record. *Wisconsin:* Tipler, Florence Co., ♂. *Ontario:* Wiar-ton, Bruce Co., ♂.

CLUBIONA OBESA Hentz

Figures 121-123, 140, 172, 224

Clubiona obesa Hentz, 1847, Proc. Boston Soc. Nat. Hist., vol. 5, p. 450, pl. 22, fig. 14. (Types from "Massachusetts, North Carolina, Alabama", lost.) Roewer, 1955, Katalog der Araneae, vol. 2a, p. 516. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1138.

Clubiona crassipalpis Keyserling, 1887, Verh. zool. bot. Gesell. Wien, vol. 37, p. 438, fig. 13 (♂ type from near Cambridge, Massachusetts, in the Museum of Comparative Zoology).

Clubiona triloba Banks, 1906, Ann. Rept. Indiana Geol. Nat. Hist. Surv., p. 737, fig. 19 (♀ syntypes from Wyandotte, Indiana, in the Museum of Comparative Zoology). Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1161. NEW SYNONYMY.

Measurements. Female. Length 6.48-10.32 mm.; average 8.28 mm. Carapace 3.92 mm. long, 2.80 mm. wide. First femur, 3.20 mm.; patella, 1.36 mm.; tibia, 2.60 mm.; metatarsus, 1.92 mm.; tarsus, 1.12 mm. Fourth femur, 3.52 mm.; patella, 1.22 mm.; tibia, 2.68 mm.; metatarsus, 3.52 mm.; tarsus, 1.04 mm.

Male. Length 5.52-8.64 mm.; average 6.84 mm. Carapace 3.16 mm. long, 2.22 mm. wide. First femur, 3.18 mm.; patella, 1.32 mm.; tibia, 3.06 mm.; metatarsus, 2.22 mm.; tarsus, 1.02 mm. Fourth femur, 3.48 mm.; patella, 1.20 mm.; tibia, 2.58 mm.; metatarsus, 3.36 mm.; tarsus, 0.88 mm.

Description. Anterior median eyes their diameter apart; in female an equal distance from laterals, in male slightly closer to laterals. Posterior medians two and one half diameters apart in female, two diameters in male, a little closer to laterals. Chelicerae robust in female, keeled on their lateral and anteromedial faces in male.

Diagnosis. The carapole of the palpus of *C. mixta* is more deeply notched than that of *C. obesa* (Figs. 121-123) and the embolus is shorter. The openings in the epigynum are larger in *C. obesa* (Fig. 140) than in *C. mixta*.

Natural History. This spider has usually been found on leaves and branches of low bushes in deciduous woods, although it also occurs in tall grass and overwinters under logs, stones, bark and debris. Hibernation usually occurs in the penultimate instar. Mature males have been collected from April to August, and females through September. Egg sacs have been found in June and July. Kaston observed that eggs laid on June 21, hatched July 11. An egg sac attached under a leaf was 6.9 mm. in diameter and 3.9 mm. high and contained 79 yellow, non-agglutinate, oval eggs each measuring about 0.95 mm. by 1.05 mm. Emerton found 33 eggs in one sac and observed that eggs laid July 5, hatched August 5, but the spiderlings did not leave the cocoon until August 26. A male and female have been found enclosed together in a silk cocoon May 24. On June 16, a male and immature females were found together in a cocoon. On the same date a young female was found with cast skins in a cocoon.

Distribution. Southeastern Canada and eastern United States.

Records. *Alabama:* Hatchet Creek, Coosa Co. *Connecticut:* Riverton; Norwalk; Westville; Woodmont, Southbury; Morris; South Meriden; Bethany; Salisbury; Branford; Simsbury; Granby; *New Haven. *District of Columbia:* Washington. *Illinois:* Urbana; Peoria; Elgin; *Waukegan; *Waukegan Flats. *Indiana:* *Wyandotte; *Richmond; *Valparaiso; *Ogden Dunes; *Smith. *Iowa:* Sioux City; Dickinson Co. *Maine:* South Casco, Lake Sebago. *Maryland:* *Prince Georges Co. *Massachusetts:* Ipswich River; Natick; Salem; Holliston; *Brookline; *Milton; *Sharon. *Michigan:* Douglas Lake; Roscommon Co.; New Baltimore; *Ann Arbor; *Saugatuck; *Lakeside. *Minnesota:* Itasca Park; Albert Lea. *Mississippi:* Camp Shelby; Centreville. *Nebraska:* Plattsmouth; Murdock; Weeping Water; Fremont; Lincoln; Ainsworth. *New Hampshire:* Three Mile Island, Lake Winnepesaukee; *Franconia. *New Jersey:* Ramsey; Oakland; Moorestown. *New York:* McLean; Van Cortland Swamp, Bronx; Valcour Island; East Hampton, L. I.; Cold Spring Harbor, L. I.; Jamaica, L. I.; Orient, L. I.; Webster; Ithaca; Enfield Gorge; Lake George; New Rochelle; Huyck Preserve, Albany Co.; *Sacandaga River; Lake Bluff; *Youngstown; *Crosby; *Newfield; Albany; Thacher Park; Cossayuna Lake; Coy Pt.,

Canandaigua Lake; *Queechy Lake; *Juanita Island, Lake George; Cragmoor; Oakland Valley; *Sea Cliff; *Roslyn. *North Carolina*: Raleigh; Transylvania Co.; *Swannanoa Valley. *Ohio*: Sandusky; *Columbus; *Rockbridge. *Pennsylvania*: *'Western Pennsylvania'. *Rhode Island*: *Providence. *Vermont*: Newfare. *Virginia*: Falls Church. *West Virginia*: *near Charleston. *Wisconsin*: Grant Co.; Racine Co.; St. Croix.

Manitoba: *Lake Winnipeg. *Ontario*: Port Credit; Portland; Wellington; West Hill, September; Fonde Bay, Lake Nipigon; Holst Point, Minaki; Point Pelee; Humber, Toronto.

CLUBIONA MIXTA Emerton

Figures 119-120, 141, 165, 223

Clubiona mixta Emerton, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 180, pl. 5, fig. 2 (♀, ♂ syntypes from Marblehead, Massachusetts, in the Museum of Comparative Zoology). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 515. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1135.

Measurements. Female: length, 6.70-9.76 mm.; average 8.30 mm. Carapace 3.60 mm. long, 2.40 mm. wide. First femur, 2.72 mm.; patella, 1.28 mm.; tibia, 2.24 mm.; metatarsus, 1.68 mm.; tarsus, 0.96 mm. Fourth femur, 3.44 mm.; patella, 1.28 mm.; tibia, 2.40 mm.; metatarsus, 2.96 mm.; tarsus, 0.96 mm.

Male: Length, 5.20-8.48 mm.; average 6.63 mm. Carapace 2.80 mm. long, 2.00 mm. wide. First femur, 2.48 mm.; patella, 1.00 mm.; tibia, 2.10 mm.; metatarsus, 1.52 mm.; tarsus, 0.66 mm. Fourth femur, 2.80 mm.; patella, 1.00 mm.; tibia, 2.72 mm.; metatarsus, 2.40 mm.; tarsus, 0.66 mm.

Description. The structure of this species is similar to that of *C. obesa* except for details of the genitalia. The carapole of *C. obesa* is less deeply notched and the embolus is comparatively longer. The sperm duct openings of *C. mixta* (Fig. 141) are smaller than in *C. obesa*.

Natural History. This species has been found on bushes and trees and under stones in silken retreats. The habits resemble those of *C. obesa*.

Distribution. Southeastern Canada, northeastern and north central United States.

Records. Connecticut: *Mount Carmel, *Portland; *Sandy Hook. *Maine:* *Portland; Long Island. *Massachusetts:* Lexington; Sharon; Holliston; *Salem; *Marblehead. *Michigan:* Macomb Co.; Oceana Co. *Minnesota:* Itasca Park. *New Hampshire:* West Ossipee. *New Jersey:* Ramsey. *New York:* Youngstown; Crosby; Chautauqua Co.; Lake Bluff. *Ohio:* Germantown; Sandusky. *Oklahoma:* Euid. *Pennsylvania:* Arentsville. *Wisconsin:* Dane Co.; Grant Co.; Racine Co.

Ontario: Haliburton.

CLUBIONA SPIRALIS Emerton

Figures 111-113, 143, 175, 212

Clubiona spiralis Emerton, 1909, Trans. Connecticut Acad. Sci., vol. 14, pl. 10, fig. 10 (δ type from Magnolia, Massachusetts, in the Museum of Comparative Zoology). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 517. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1153.

Measurements. Female: Length 4.74-7.62 mm.; average 6.12 mm. Carapace 2.70 mm. long, 1.98 mm. wide. First femur, 1.80 mm.; patella, 0.90 mm.; tibia, 1.44 mm.; metatarsus, 1.08 mm.; tarsus, 0.66 mm. Fourth femur, 2.40 mm.; patella, 0.90 mm.; tibia, 1.81 mm.; metatarsus, 2.34 mm.; tarsus, 0.66 mm.

Male: Length 4.38-5.70 mm.; average 5.16 mm. Carapace 2.46 mm. long, 1.62 mm. wide. First femur, 1.86 mm.; patella, 0.72 mm.; tibia, 1.56 mm.; metatarsus, 1.02 mm.; tarsus, 0.63 mm. Fourth femur, 2.34 mm.; patella, 0.84 mm.; tibia, 1.83 mm.; metatarsus, 2.22 mm.; tarsus, 0.69 mm.

Description. Anterior median eyes separated by their diameter in female, two-thirds diameter in male, closer to laterals. Posterior medians separated by three and one-half diameters in female, by two diameters in male, closer to laterals. The distinctive epigynum with sperm duct openings transverse slits on a median ridge (Fig. 143); palpus illustrated by Figures 111-113.

Distribution. Northeastern states and southeastern Canada.

Records. Connecticut: Salisbury, ♀. *Maine:* Orono, ♀. *Massachusetts:* West Gloucester, ♀; *Ipswich, ♀; *Blue Hills, ♀. *New Hampshire:* Meredith, ♀; Jackson, ♂. *New Jersey:* Ramsey, ♂, ♀. *New York:* Brant Lake, ♂; Lake Keuka, ♂; Elizabethtown, ♂; Newfane, ♂, ♀; Ithaca, ♂; Chesire, ♀; Sea Cliff, ♀. *Pennsylvania:* Potters Mills, ♀; Johnstown, ♂.

Ontario: Newmarket, ♀; Fort Severn, ♀.

CLUBIONA BRYANTAE Gertsch
 Figures 114-115, 137, 174, 221

Clubiona agrestis Emerton, 1924, Psyche, vol. 31, p. 144, Fig. 6 (♂ syntypes from Holliston, Massachusetts, in the Museum of Comparative Zoology). Name preoccupied by *C. agrestis* Hentz.

Clubiona bryantae Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 16. New name for *C. agrestis*, preoccupied. Roewer, 1955, Katalog der Araneae, vol. 2a, p. 513.

Measurements. Female: Length 5.10-7.20 mm.; average 6.26 mm. Carapace 2.85 mm. long, 2.16 mm. wide. First femur, 1.80 mm.; patella, 0.69 mm.; tibia, 1.56 mm.; metatarsus, 1.11 mm.; tarsus, 0.63 mm. Fourth femur, 2.28 mm.; patella, 0.90 mm.; tibia, 1.20 mm.; metatarsus, 1.38 mm.; tarsus, 0.57 mm.

Male. Length 4.40-5.70 mm.; average 4.98 mm. Carapace 2.46 mm. long, 1.76 mm. wide. First femur, 1.90 mm.; patella, 0.97 mm.; tibia, 1.67 mm.; metatarsus, 1.20 mm.; tarsus, 0.66 mm. Fourth femur, 2.10 mm.; patella, 0.97 mm.; tibia, 1.67 mm.; metatarsus, 2.46 mm.; tarsus, 0.77 mm.

Description. Anterior median eyes more than their diameter apart, as far from larger laterals in female, closer in male. Posterior medians separated by more than three diameters in female, two and a half diameters in male, closer to slightly larger lateral eyes. Epigynum illustrated by Figure 137, palpus by Figures 114-115.

Records. Illinois: nr. Chicago, ♀. Maine: Mount Desert Isl., ♀. Massachusetts: Holliston, ♂, ♀; Blue Hills, ♂. Michigan: *Conway, ♂, ♀. New York: Lake Sebago, ♀. Wyoming: 13 mi. N. of Old Faithful, Yellowstone Natl. Park, ♀.

Ontario: Fort Albany, ♀.

CLUBIONA RILEYI Gertsch
 Figures 157, 213

Clubiona rileyi Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 17, fig. 47 (♀ type from Itasca Park, Minnesota, in the American Museum of Natural History). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 517.

Clubiona elizabethae Kaston, 1945, Amer. Mus. Novitates, no. 1290, p. 4, fig. 43, ♀ (juv. ♀ type from Riverton, Connecticut in the American Museum of Natural History). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 514. NEW SYNONYMY.

Measurements. Female: Length 7.42 mm. Carapace 3.24 mm. long, 2.28 mm. wide. First femur, 2.64 mm.; patella, 1.26 mm.; tibia, 2.34 mm.; metatarsus, 1.80 mm.; tarsus, 1.02 mm. Fourth femur, 3.18 mm.; patella, 1.26 mm.; tibia, 2.58 mm.; metatarsus, 3.06 mm.; tarsus, 1.02 mm.

Description. Anterior median eyes their diameter apart. Posterior medians three diameters apart, closer to laterals. Epigynum illustrated by Figure 157. The male is not known.

Comment. The type of *C. elizabethae* lacks internal genitalia, thus is an immature.

Records. Connecticut: Meriden, ♀ (H. L. Johnson).

CLUBIONA KULCZYNSKII de Lessert

Figures 148-149, 158, 168, 217

Clubiona kulczynskii de Lessert, 1905, Rev. Suisse Zool., vol. 13, p. 647, fig. 13 (♂ type from Schuls, Graubünden, Switzerland at 1250 m. elev.). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 495. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1130.

Clubiona intermontana Gertsch, 1933, Amer. Mus. Novitates, no. 637, p. 9, figs. 10, 13 (♂ type from Slough Creek, Yellowstone National Park, Wyoming, in the American Museum of Natural History). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 515. NEW SYNONYMY.

Clubiona altana Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 16, fig. 54 (♀ type from Seba, Alberta, in the American Museum of Natural History). NEW SYNONYMY.

Measurements. Female: Length 4.80-7.75 mm.; average 5.71 mm. Carapace 2.64 mm. long, 1.86 mm. wide. First femur, 2.04 mm.; patella, 0.90 mm.; tibia, 1.50 mm.; metatarsus, 1.02 mm.; tarsus, 0.60 mm. Fourth femur, 2.52 mm.; patella, 0.96 mm.; tibia, 1.92 mm.; metatarsus, 2.40 mm.; tarsus, 0.72 mm.

Male: Length 4.35-5.04 mm.; average 4.72 mm. Carapace 2.34 mm. long, 1.65 mm. wide. First femur, 1.92 mm.; patella, 0.84 mm.; tibia, 1.50 mm.; metatarsus, 1.26 mm.; tarsus, 0.82 mm. Fourth femur, 2.66 mm.; patella, 0.90 mm.; tibia, 1.80 mm.; metatarsus, 2.34 mm.; tarsus, 0.82 mm.

Description. Anterior median eyes a little more than their diameter apart in female, by their radius in males, two thirds as far from larger lateral eyes. Posterior median eyes separated

by two and a half times their diameter in female, by two diameters in male, closer to laterals. Epigynum illustrated by Figure 158, palpus by Figures 148-149.

Natural History. This species has been collected from lodge-pole pine forest in the Rocky Mountains, and females with egg sac in a rolled up *Sambucus* leaf.

Distribution. Switzerland, Scandinavia, Kamchatka; Rocky Mountains, northern United States to Alaska.

Records. *Colorado:* 4 mi. N. of Allenspark, Boulder Co.; Crystal, Gunnison Co. *New York:* Summit of Mt. MacIntyre. *North Carolina:* Summit of Roan Mt. *Vermont:* Burke Mtn. *Wyoming:* Two Ocean Lk.; Emma Matilda Lake, Teton Co. *Alaska:* Tnoko; *Juneau; *5 mi. S. of Rapids, on Richardson Highway; *Matanuska.

Alberta: Banff, Seba Beach; Edmonton. *Newfoundland:* Spruce Brook. *Ontario:* Mattagami River, Smoky Falls. *Saskatchewan:* Lac La Rouge. *Yukon:* Marsh Lake.

CLUBIONA CALIFORNICA FOX

Figures 152-154, 167, 218

Clubiona californica Fox, 1938, Iowa State College Jour. Sci., vol. 12, p. 239, pl. 2, fig. 4 (♀ type from San Francisco, California, in the United States National Museum).

Measurements. Female: Length 4.62-6.06 mm.; average 5.53 mm. Carapace 2.37 mm. long, 1.62 mm. wide. First femur, 1.50 mm.; patella, 0.78 mm.; tibia, 1.11 mm.; metatarsus, 0.72 mm.; tarsus, 0.54 mm. Fourth femur, 1.68 mm.; patella, 0.78 mm.; tibia, 1.98 mm.; metatarsus, 1.68 mm.; tarsus, 0.60 mm.

Male: Length 3.78-4.80 mm.; average 4.27 mm. Carapace 1.98 mm. long, 1.44 mm. wide. First femur, 1.38 mm.; patella, 0.63 mm.; tibia, 1.26 mm.; metatarsus, 0.96 mm.; tarsus, 0.60 mm. Fourth femur, 1.62 mm.; patella, 0.66 mm.; tibia, 1.26 mm.; metatarsus, 1.56 mm.; tarsus, 0.60 mm.

Description. Anterior median eyes their diameter apart, slightly closer to laterals. Posterior medians separated by three diameters in female, by two in male. Epigynum illustrated by Figure 218.

Diagnosis. The dorsal division of the palpal apophysis is nearly the same thickness as the ventral division, and the ventral division is less than twice as long as the dorsal. (Figs. 152, 154) while in *C. canadensis* the ventral division is heavier and at least twice as long as the dorsal.

Records. California: Bodega Bay, ♀, ♂; Yosemite Natl. Park, ♀, ♂ (W. J. Gertsch).

CLUBIONA NORVEGICA Strand

Figures 146-147, 156, 164, 215

Clubiona norvegica Strand, 1900, Norske Vid. Selsk. Skrift, p. 30, fig. e (♂ type from Røsvandsholmen, Hatfjelddalen, Norway). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 497. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1138.

Clubiona canadensis, Emerton, 1909, Trans. Connecticut Acad. Sci., vol. 14, pl. 10, fig. 8 (err. det.). Kaston, 1948, Bull. Connecticut Geol., Nat. Hist. Surv., no. 70 (in part) fig. 1345. Not *C. canadensis* Emerton.

Clubiona carpenterae Fox, 1938, Iowa State College Jour. Sci., vol. 12, p. 240, pl. 2, fig. 7 (♀ type from Labrador in the United States National Museum). NEW SYNONYMY.

Measurements. Female: Length 4.65-7.26 mm.; average 6.70 mm. Carapace 2.82 mm. long, 1.98 mm. wide. First femur, 1.92 mm.; patella, 0.99 mm.; tibia, 1.62 mm.; metatarsus, 1.14 mm.; tarsus, 0.74 mm. Fourth femur, 2.52 mm.; patella, 0.92 mm.; tibia, 1.68 mm.; metatarsus, 2.24 mm.; tarsus, 0.74 mm.

Male. Length 4.86-5.28 mm.; average 5.07 mm. Carapace 2.35 mm. long, 1.59 mm. wide. First femur, 1.98 mm.; patella, 0.90 mm.; tibia, 1.74 mm.; metatarsus, 1.02 mm.; tarsus, 0.78 mm. Fourth femur, 2.16 mm.; patella, 0.78 mm.; tibia, 1.74 mm.; metatarsus, 2.04 mm.; tarsus, 0.72 mm.

Description. Anterior eyes their radius apart in female, anterior medians slightly more separated in male. Posterior medians separated by three diameters, closer to laterals, those of male closer together. The male has a prolateral ridge on the attenuated chelicerae. The ventral division of the palpal apophysis of the palpus is very much longer than the dorsal division and both divisions extend ventrally (Figs. 146-147). The epigynum (Fig. 156) is distinct.

Distribution. England, Scandinavia, Finland, Northern United States, Canada.

Records. *Minnesota:* Itasca Park. *New York:* Long Lake, Adirondack Mountains. *Oregon:* Scappoose. *Utah:* W. $111^{\circ}55'$; N. $40^{\circ}15'$. *Washington:* Lupez Island. *Alaska:* College; Kobuk Riv., between Shunguak and Kiana; 86 mi. N. of Fairbanks, nr. Alaska Lodge.

Labrador: Butte Harbor; Battle Harbor. *Mackenzie:* Reindeer Station; Pearson Point, Great Slave Lake. *Manitoba:* Churchill; Manitoba; Victoria Beach. *Newfoundland:* NE. of Belle Island. *Ontario:* Weller Bay; Hallowell; Cape Henrietta Maria; Mindemoya, Lake Manitoulin.

CLUBIONA CANADENSIS Emerton

Figures 150-151, 155, 163, 216

Clubiona canadensis Emerton, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 181, pl. 5, fig. 4 (σ , ♀ syntypes from Mt. Washington, New Hampshire, in the Museum of Comparative Zoology). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 514. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1115.

Clubiona pacifica Banks, 1896, Trans. Amer. Ent. Soc., vol. 23, p. 65 (♀ syntypes from Olympia, Washington, in the Museum of Comparative Zoology). Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1139.
NEW SYNONYMY.

Measurements. Female: Length 6.00-11.50 mm.; average 7.76 mm. Carapace, 2.92 mm. long, 2.08 mm. wide. First femur, 2.16 mm.; patella, 1.04 mm.; tibia, 1.52 mm.; metatarsus, 1.16 mm.; tarsus, 0.76 mm. Fourth femur, 2.56 mm.; patella, 1.04 mm.; tibia, 1.76 mm.; metatarsus, 2.24 mm.; tarsus, 0.76 mm.

Male: Length 4.80-8.00 mm.; average 6.07 mm. Carapace 2.82 mm. long, 2.07 mm. wide. First femur, 2.52 mm.; patella, 1.14 mm.; tibia, 2.10 mm.; metatarsus, 1.59 mm.; tarsus, 0.93 mm. Fourth femur, 3.00 mm.; patella, 1.14 mm.; tibia, 2.40 mm.; metatarsus, 2.88 mm.; tarsus, 0.98 mm.

Description. Anterior median eyes one-half to two-thirds their diameter apart, slightly farther (in female), closer (in male) to lateral eyes. Posterior medians three and a half diameters apart in female, two and a quarter in male, two-thirds as far

from laterals. Epigynum illustrated by Figure 155, often margin disappearing in genital groove; male palpus illustrated by Figures 150-151 differentiate it from *C. californica*.

Natural History. This species has been collected from trees and shrubs, from under loose bark, under stones, fallen leaves and moss. Individuals mature from June to September. It usually hibernates in the immature stage, and immature specimens may be found as late as July 16, with mature individuals appearing after the middle of June. A female from Nova Scotia was collected with her egg sac in September. The egg sac was a flat oval measuring 18 by 14 mm.

Distribution. Western Mountains, northern United States, Canada to Alaska.

Records. *California:* Yosemite; Echo Lake; Ben Lomond; Mount Shasta; Marin Co. *Colorado:* Crater Lk., Pitkin Co.; Crystal and Gothic, Gunnison Co. *Connecticut:* *New Haven; *Riverton; *Salisbury. *Idaho:* Crow Creek. *Maine:* South Harpswell; Baxter St. Park. *Michigan:* Crawford Co. *Minnesota:* Minneapolis. *Montana:* Numa Ridge, Glacier Natl. Park. *New Hampshire:* Pike, nr. Gorham; Randolph; *Mt. Washington. **Franconia;* *Lake Winnepesaukee. *New Jersey:* Kittatinny Mtn., Warren Co. *New York:* Callicoon; Snyder Lake; Hunter; Point Breeze; Artist's Brook; Trout Pond; Slide Mountain, Adirondack Lodge; Mt. McIntyre; Ithaca; Speculator; Hunter Mtn., Mt. Whiteface; Lake Keuka; *Wilmington; *Lake Cinnamon; Riders Mills; Stamford. *North Carolina:* Frying Pan Gap; *Linville. *Oregon:* McCredie Springs; Mary's Peak; Salt Creek Pass; Oak Ridge; Lake of the Woods; McKenzie Bridge; Cave City; Bandon; Mt. Hood; Spencer Butte; Fossil Point; Marshfield; Eugene; Medford; Colton; Corvallis; Portland; McMinnville, Hood River Co. *Pennsylvania:* Laurenceville. *Tennessee:* Great Smoky Mtns. Natl. Park. *Utah:* Silver Lake; Fish Lake; Salt Lake City; 15 m. N. of Boulder; Pine Isl. Lake. *Vermont:* Rutland; Mt. Mansfield. *Virginia:* Mountain Lake; Siles Co. *Washington:* Mt. Ranier; *Olympia; *Camp Umatilla; *Chihalis; Seattle; *Olympic Peninsula; *Lopez Isl.; *San Juan Isl.; *Cypress Isl.; *Shaw Isl.; *Orcas Isl.; *Blakely Isl.; *Spieden Isl.; Walla Walla. *Wisconsin:* Calumet Co.; Door Co.; Manitowoc Co. *Wyoming:* Grand Teton Natl. Park.

Alaska: Shagway; Admiralty Islands; Nakutat; Aleutian Island; *Juneau; Kuhak Bay; *Haines.

Alberta: Seba Beach; Fitzgerald; Devils Lake; Lake Louise; Lembrieh Falls. *British Columbia*: Wellington; Vancouver; *Kaslo; *Bear Lake; *Kaslo Creek; *Glacier; *Balfour; *Ainsworth; *Metlakatla. *Labrador*: Paradise River; *Battle Harbor. *Manitoba*: La Pas; Ohnr; Victoria Beach; Lockhead; Horse Shoe Lake. *New Brunswick*: Fredricton. *Newfoundland*: Humber River; Stephenville Crossing, Bay of Saint George. *Nova Scotia*: Digby; Barrington. *Ontario*: Nipigon; Mindemoya, Manitoulin; Wellington: Silver Inlet, Thunder Bay; Deux Rivières; Port Arthur; Island 1008, Lake Temagami; Kakinor; Algonquin Park; Costello Creek, Algonquin Park; Smoke Lake, Algonquin Park; Little Vermilion Lake; Kagawong, Manitoulin; Pobler Island; Hollowalk; Eva L. Quetico Park; Altonapeskat; Grimthop, Manitoulin; Smoky Falls, Mattagami Riv.; Beaver Riv., Grey Co.; *Shea's Bay, Anticosti. *Quebec*: *Montreal; Gaspé; Ellis Bay, Anticosti. *Saskatchewan*: Lac La Rouge; Waterton; Waskesiu.

CLUBIONA ADJACENS Gertsch and Davis

Figures 54-55, 160

Clubiona adjacens Gertsch and Davis, 1936, Amer. Mus. Novitates no. 881, p. 19, figs. 35 (δ type from Cameron Co., Texas, in the American Museum of Natural History). Gertsch, 1941, *ibid.*, no. 1148, p. 8, figs. 30, 31. Roewer, 1955, Katalog der Araneae, vol. 2a, p. 513.

Measurements. Male: Total length 2.30 mm. Carapace 1.05 mm. long, 0.75 mm. wide. First femur, 0.72 mm.; patella, 0.38 mm.; metatarsus, 0.48 mm.; tarsus, 0.30 mm.

Description. Anterior median eyes their radius apart, half as far from laterals. Posterior medians two diameters apart, one from laterals. Figures 54, 55, 160 were made after drawings by Gertsch and Davis (1936) and Gertsch (1941). The female is not known.

CLUBIONA GERTSCHII, new species

Figures 50-51, 84, 195, 232

Type. Male holotype from under stone on Mt. Washington, New Hampshire, July 4, 1907 (J. H. Emerton) in the Museum of Comparative Zoology.

Measurements. Female: Length 4.93 mm. Carapace 2.23 mm. long, 1.50 mm. wide. Abdomen, 2.83 mm. long, 1.70 mm. wide. First femur, 1.29 mm.; patella, 0.67 mm.; tibia, 1.02 mm.; metatarsus, 0.73 mm.; tarsus, 0.42 mm. Fourth femur, 1.53 mm.; patella, 0.75 mm.; tibia, 1.33 mm.; metatarsus, 1.33 mm.; tarsus, 0.52 mm.

Male: Length 4.14 mm. Carapace 1.92 mm. long, 1.26 mm. wide. Abdomen 2.22 mm. long, 1.35 mm. wide. First femur, 1.20 mm.; patella, 0.60 mm.; tibia, 1.08 mm.; metatarsus, 0.75 mm.; tarsus, 0.48 mm. Fourth femur, 1.47 mm.; patella, 0.59 mm.; tibia, 1.26 mm.; metatarsus, 1.47 mm.; tarsus, 0.55 mm.

Description. Female: Clypeus equal in height to one-fourth diameter of an anterior median eye. First row of eyes slightly recurved as seen from front and narrower than second row, the median eyes separated by less than one diameter, nearer larger laterals. Second row of eyes slightly procurved, the medians separated by slightly more than two diameters, nearer the somewhat larger laterals. Chelicerae armed with three small teeth on lower margin of furrow, the first two being close together and smallest.

Carapace red-brown, unmarked except for dark median groove and black rings surrounding eyes, clothed with fine sub-erect dark hairs and scattered dark bristles which are longest and most numerous in ocular area. Sternum light yellow-brown, margins darker brown with prominent dark spots at coxae. Chelicerae dark red-brown, provided with conspicuous lateral condyles. Endites light brown, as is the distal margin of labium, the rest of the labium being dark brown. Coxae and legs light yellow-brown, clothed with sub-erect long hairs and scattered black bristles. Dorsum of abdomen light red-brown with many scattered fine light yellow spots shading to a darker color in posterior regions. There is a faint indication of posteriorly directed chevrons on the distal third of abdomen. Dorsum is clothed with fine recumbent pubescent hairs and scattered sub-erect dark bristles which are coarser and most numerous at base. Venter of abdomen light yellow-brown with two longitudinal lines of small dark spots near the midline. Epigynum as illustrated in Figure 84.

Male. Clypeus equal in height to one-fifth of diameter of an anterior median eye. First row of eyes straight as seen from front and narrower than the second row, median eyes separated by nearly two-thirds diameter, nearer equal laterals. Median ocular area broader than long, narrowed in front; eyes equal in size. Chelicerae with well developed lateral condyles armed with three small teeth on lower margin of furrow, the tooth nearest base of fang the smallest. Coloration similar to that of female. Palpus as illustrated in Figures 50-51.

Diagnosis. The character of palpi and epigynum shows that this species is most closely related to *C. johnsoni* and *C. kastoni*. *Clubiona gertschi* is easily distinguished from *C. kastoni* in that the posterior median eyes are separated by two diameters. The larger size and coloration of the abdomen readily distinguish *C. gertschi* from *C. johnsoni*.

Distribution. It is interesting to note that this species has been taken only on mountain tops in Vermont, New Hampshire and Maine, where it has been found under stones.

Records. *Maine:* Mount Katahdin, ♀ allotype, July (J. H. Emerton). *New Hampshire:* Mount Moosilauke, ♀ paratype, July (E. B. Bryant); Mount Washington, ♂ holotype, July (J. H. Emerton). *Vermont:* Mt. Mansfield, ♂, ♀ (H. and L. Levi).

CLUBIONA RHODODENDRI Barrows

Figures 38, 39, 230

Clubiona rhododendri Barrows, 1945, Ann. Ent. Soc. Amer., vol. 38, p. 72, pl. 1, figs. 2, 4 (♂ and ♀ types from New Found Gap, Great Smoky Mountain National Park, Tennessee).

Measurements. Male: Length, 3.48 mm. Carapace 1.74 mm. long, 1.26 mm. wide. First femur, 1.38 mm.; patella, 0.60 mm.; tibia, 1.32 mm.; metatarsus, 0.93 mm.; tarsus, 0.51 mm. Fourth femur, 1.62 mm.; patella, 0.60 mm.; tibia, 1.38 mm.; metatarsus, 1.59 mm.; tarsus, 0.54 mm.

Description. Male: Anterior median eyes their radius apart, half as far from slightly larger lateral eyes. Posterior medians two diameters apart, closer to smaller laterals. Palpus illustrated by Figures 38-39. The female specimens have apparently been lost.

Diagnosis. This species is most closely related to *C. abbotii*, but is readily distinguished from *abbotii* in that the tibial apophyses of *rhododendri* are directed ventrad and the retrolateral apophysis is nearly as broad as long, whereas in *abbotii* the tibial apophyses are directed distad and the retrolateral apophysis is distinctly longer than broad.

Natural History. This species has been taken from rhododendron bushes and from the leaves under these bushes along streams from 2,550 feet up to 5,000 feet elevation. *Clubiona abbotii* has not been collected in the locality in which *rhododendri* has been collected.

CLUBIONA PLUMBI Gertsch

Figures 60-61, 95, 250

Clubiona plumbi Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 12, figs. 21-22 (δ type from Long Island, New York, in the American Museum of Natural History). Barnes, 1953, Amer. Mus. Novitates, no. 1632, p. 16.

Measurements. Female: Length 3.6 mm. Carapace 1.79 mm. long, 1.20 mm. wide. First femur, 0.94 mm.; patella, 0.52 mm.; tibia, 0.78 mm.; metatarsus, 0.63 mm.; tarsus, 0.39 mm. Fourth femur, 1.40 mm.; patella, 0.66 mm.; tibia, 1.17 mm.; metatarsus, 1.33 mm.; tarsus, 0.42 mm.

Male: Length: 2.95-4.1 mm. One male length 2.95 mm. Carapace, 1.36 mm. long, 0.93 mm. wide.

Description. Anterior median eyes their radius apart, half as far from laterals. Posterior median eyes one and one half (Massachusetts) to two diameters (North Carolina) apart, less than a diameter from laterals.

Diagnosis. This species is closely related to *C. pikei* Gertsch, but is smaller, and the eyes are spaced closer.

Natural History. Found in dry beach habitats such as dune grass and dry beach drift (Barnes, 1953).

Records. Massachusetts: Wellfleet, ♀, ♂ (N. Banks). North Carolina: Carrot Isl., Carteret Co., ♀, ♂ (R. Barnes).

CLUBIONA OPEONGO, new species

Figures 86, 234

Type. Female holotype from Lake Opeongo, Algonquin Park, Ontario, July 20, 1943, in the American Museum of Natural History.

Measurements. Female: Length 3.60 mm. Carapace 1.82 mm. long, 1.30 mm. wide. First femur, 1.05 mm.; patella, 0.51 mm.; tibia, 0.79 mm.; metatarsus, 0.59 mm.; tarsus, 0.38 mm. Fourth femur, 1.35 mm.; patella, 0.57 mm.; tibia, 1.00 mm.; metatarsus, 1.33 mm.; tarsus, 0.45 mm.

Description. Anterior median eyes their diameter apart, less than their diameter from laterals. Posterior median eyes a little more than three diameters apart, two from laterals. The color is yellow-white except for the black eye-rings.

Diagnosis. The openings of the epigynum (Fig. 86) are similar to that of *C. littoralis*, but the ducts and receptacles are closer to each other.

CLUBIONA LITTORALIS Banks

Figures 70-71, 87, 201, 242

Clubiona littoralis Banks, 1895, Jour. New York Ent. Soc., vol. 3, p. 79 (δ , ♀ syntypes from Sea Cliff, Long Island, New York, in the Museum of Comparative Zoology). Barnes, 1953, Amer. Mus. Novitates, no. 1632, p. 15. Roewer, 1955, Katalog der Araneae, vol. 2a, p. 515. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1131.

Clubiona latifrons Emerton, 1913, Trans. Connecticut Acad. Sci., vol. 18, p. 220, pl. 2, fig. 12 (δ , ♀ syntypes from Plum Island, Ipswich, Massachusetts, in the Museum of Comparative Zoology).

Measurements. Female: Length 4.44-7.80 mm.; average 6.20 mm. Carapace 2.76 mm. long, 1.86 mm. wide. First femur, 1.62 mm.; patella, 0.96 mm.; tibia, 1.50 mm.; metatarsus, 1.14 mm.; tarsus, 0.66 mm. Fourth femur, 2.01 mm.; patella, 0.96 mm.; tibia, 1.65 mm.; metatarsus, 2.22 mm.; tarsus, 0.66 mm.

Male: Length 4.26-5.46 mm.; average 5.06 mm. Carapace 2.40 mm. long, 1.56 mm. wide. First femur, 1.32 mm.; patella, 0.72 mm.; tibia, 1.26 mm.; metatarsus, 1.08 mm.; tarsus, 0.60 mm. Fourth femur, 1.56 mm.; patella, 0.72 mm.; tibia, 1.35 mm.; metatarsus, 1.71 mm.; tarsus, 0.60 mm.

Description. Anterior median eyes three-fourths diameter apart, twice as far from larger lateral eyes. Posterior medians three and a half diameters apart in female, less than three in male, closer to laterals.

Diagnosis. This is one of the most readily distinguished species of the *abbotii* group because of its larger size, the very broad cephalic part of the cephalothorax, the more widely spaced eyes, and the heavy and protruding chelicerae. The male palpus (Figs. 70-71) is distinct as is shown in the figures. The epigynum of the female somewhat resembles that of *Clubiona kastoni*, but differs in several details as shown in Figure 87.

Natural History. This species has been collected from salt marsh grass (Barnes, 1953).

Distribution. Ontario, Atlantic coast states to Florida.

Records. *Florida:* Cedar Keys, ♀. *Massachusetts:* Martha's Vineyard, ♂, ♀; *Plum Isl., Ipswich, ♂, ♀; *Dighton, ♂, ♀; *Nantucket, ♀, ♂. *New Jersey:* Cape May, ♀. *North Carolina:* Beaufort, Carteret Co. *New York:* Sea Cliff, L. I., ♂, ♀; Amagansett, L. I., ♀; Gardiners Isl., ♂.

Ontario: Barrie Isl., Manitoulin Lake, ♀.

CLUBIONA BISHOPI, new species

Figures 40-41

Type. Male holotype from Cheat Range, Durbin, West Virginia, August 1, 1943, in the American Museum of Natural History.

Measurements. Male: Length 4.36 mm. Carapace 2.02 mm. long, 1.52 mm. wide. Abdomen 2.40 mm. long, 1.52 mm. wide. First femur, 1.44 mm.; patella, 0.60 mm.; tibia, 1.35 mm.; metatarsus, 0.90 mm.; tarsus, 0.48 mm. Fourth femur, 1.68 mm.; patella, 0.69 mm.; tibia, 1.38 mm.; metatarsus, 1.62 mm.; tarsus, 0.51 mm.

Description. Clypeus equal in height to one-fourth diameter of an anterior median eye. First row of eyes straight as seen from front and narrower than the second row, median eyes separated by radius of one of them, an equal distance from slightly larger oval laterals. Second row of eyes straight, median eyes separated by one and a half times diameters, two-thirds as far from smaller

laterals. Eyes subequal in size. Chelicerae armed with four small teeth on lower margin of the furrow; teeth nearest base of fang very small. Leg spines robust and brown in color.

Carapace pale yellow-brown and unmarked except for the dark median groove and the black rings surrounding the eyes. Chelicerae attenuated, orange-brown, clothed sparsely with long erect black bristles on anterior faces. Labium and endites light yellow-brown except for pale yellow distal margins. Sternum pale yellow with light yellow-brown margins. Coxae and proximal segments of the legs concolorous with sternum, distal segments of legs light yellow-brown. Dorsum of abdomen light rusty-brown flecked with small spots of pale yellow. An indistinct median stripe of light brown extends from base of abdomen to a point about half-way back on dorsum. Venter of abdomen unmarked pale yellow-brown.

Diagnosis. This species is closely related to *C. rhododendri*, but may be readily distinguished from that species in that the dorsal tibial apophysis of *C. bishopi* (Figs. 40, 41) is bluntly rounded, whereas in *C. rhododendri* it is sharply pointed.

Records. *Maine:* Katahdin Stream Camp, Piscataquis Co. *New York:* Jordanville, ♂ paratype, November (C. Crosby and H. Dietrich). *West Virginia:* Cheat Range, Durbin, ♂, August. *Ontario:* Mindemoya, Manitoulin, ♂ paratype, July (T. Kurata); Lake Arehamboult, ♂ paratype, August (Kurata).

CLUBIONA KASTONI Gertsch

Figures 46-47, 81, 196, 233

Clubiona kastoni Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 14, figs. 37-39 (♂ type from Norwalk, Connecticut, in the American Museum of Natural History). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 515.

Measurements. Female: Length 3.12-5.22 mm.; average 4.21 mm. Carapace 1.86 mm. long, 1.26 mm. wide. First femur, 1.08 mm.; patella, 0.54 mm.; tibia, 0.86 mm.; metatarsus, 0.66 mm.; tarsus, 0.38 mm. Fourth femur, 1.35 mm.; patella, 0.54 mm.; tibia, 1.14 mm.; metatarsus, 1.44 mm.; tarsus, 0.42 mm.

Male: Length 3.06-4.02 mm.; average 3.65 mm. Carapace 1.80 mm. long, 1.32 mm. wide. First femur, 1.32 mm.; patella,

0.54 mm.; tibia, 1.14 mm.; metatarsus, 0.84 mm.; tarsus, 0.48 mm. Fourth femur, 1.62 mm.; patella, 0.60 mm.; tibia, 1.20 mm.; metatarsus, 1.56 mm.; tarsus, 0.50 mm.

Description. Anterior median eyes two-thirds diameter apart, closer to slightly larger laterals. Posterior eyes two and a half diameters apart, one and a quarter diameters from laterals.

Diagnosis. The tibial apophyses of the palpus of *C. kastoni* (Figs. 46, 47) are more robust and the retrolateral apophysis is much broader at the base than is the case in closely related *C. saltitans*, and the cheliceral keels found in *saltitans* are missing in the males of *kastoni*. The sperm receptacles of the epigynum of *C. kastoni* (Fig. 81) are widely separated and the sperm duct openings are oval in shape, whereas in *C. saltitans*, the sperm receptacles are closer together and the sperm duct openings are nearly round.

Distribution. Most parts of the United States and southern Canada.

Records. *California:* Weed. *Connecticut:* Columbia; Norwalk, ♂ holotype, ♀ allotype, ♀ paratypes; Cheshire, ♀ paratype; *Macedonia; *Portland; *Watertown; *Wilton; New Haven. *District of Columbia:* Washington. *Maine:* Wales; Orono, ♀ paratype. *Massachusetts:* Boston; Holliston; Cambridge. *Nebraska:* nr. Lincoln. *New Hampshire:* Gilman town; Mt. Washington. *New Jersey:* Ramsey. *New York:* Lake Sebago, Interstate Park, ♂ paratype; Ithaca, ♂, Sea Cliff; Flushing; Black Brook; Long Pond; Cheshire; Bolton; Lake George; Stamford; Yonkers; Wappingers Falls; Cragmoor. *North Carolina:* Mt. Graybeard. *Ohio:* Cantwell Cliffs, Hocking Co. *Oregon:* Goble, ♂ paratypes; Scappoose, ♂, ♀ paratypes; Portland; nr. McMinnville. *Tennessee:* Kingston, ♂ paratype. *Vermont:* South Newfane. *Wisconsin:* St. Croix Falls.

Alberta: Edmonton. *British Columbia:* Wellington. *Ontario:* Toronto; South Tea Lake, Algonquin Park; Wellington; Sproule Bay, Lake Opeongo; Port Credit. *New Brunswick:* Newburg.

CLUBIONA ESTES, new species

Figures 78, 197, 247

Type. Female holotype from 10 miles west of Estes Park, Rocky Mountain National Park, Colorado, July 8, 1949 (W. J.

and J. W. Gertsch) in the American Museum of Natural History.

Measurements. Female: Length 4.23 mm. Carapace 1.70 mm. long, 1.27 mm. wide. Abdomen 2.73 mm. long, 1.73 mm. wide. First femur, 0.77 mm.; patella, 0.47 mm.; tibia, 0.70 mm.; metatarsus, 0.50 mm.; tarsus, 0.40 mm. Fourth femur, 1.33 mm.; patella, 0.47 mm.; tibia, 0.87 mm.; metatarsus, 1.07 mm.; tarsus, 0.43 mm.

Description. Clypeus equal in height to one-sixth diameter of an anterior median eye. First row of eyes straight as seen from front. Eyes separated by radius of one of them. Second row of eyes very slightly procurved, median eyes separated by three times the diameter of one of them, nearer the equal lateral eyes. Eyes unequal in size. Chelicerae armed with four teeth on lower margin of furrow; first two being close together and very small.

Carapace very light yellow-brown, unmarked except for very short dark median groove and black eye rings. Sternum pale yellow with a light brown border and two light brown spots on margin at third coxae and two dark brown spots on margin at fourth coxae. Sternum clothed with long and dark sub-erect hairs in median portion and erect dark bristles at margins. Chelicerae brown and clothed on anterior faces with scattered pubescent hair and long black bristles. Endites and labium light brown except for a thin band of light yellow at distal margins, and clothed with scattered black bristles. Coxae and femora very pale yellow, with remainder of legs a very light yellow-brown. Dorsum of abdomen a very pale yellow, unmarked, slightly darker posteriorly, sides and venter concolorous with dorsum and likewise unmarked.

Diagnosis. This species is closely related to *C. mutata*, but is larger. The anterior median eyes of *C. estes* are separated by the radius of one of them, whereas in *C. mutata*, the anterior medians are separated by a diameter. The shape of the sperm duct openings of the epigyna (Fig. 78) differ slightly in shape, as do other details.

CLUBIONA ODELLI, new species

Figures 82, 190, 231

Type. Female holotype from North Creede, Colorado, July 1934 (F. M. Carpenter) in the Museum of Comparative Zoology.

Measurements. Female. Length 6.12 mm. Carapace 2.16 mm. long, 1.53 mm. wide. Abdomen 4.08 mm. long, 2.25 mm. wide. First femur, 1.20 mm.; patella, 0.66 mm.; tibia, 1.02 mm.; metatarsus, 0.72 mm.; tarsus, 0.42 mm. Fourth femur, 1.50 mm.; patella, 0.72 mm.; tibia, 1.26 mm.; metatarsus, 1.47 mm.; tarsus, 0.54 mm.

Description. Clypeus equal in height to one-sixth diameter of an anterior median eye. First row of eyes very slightly procurved as seen from front, the median eyes separated by one-half diameter, slightly farther from larger laterals. Second row of eyes nearly straight, medians separated by approximately two and a half diameters, less than one and a half diameters from subequal laterals; the eyes equal in size. Chelicerae armed on lower margin with three teeth, the first being the smallest.

Carapace light yellow-brown, unmarked except for dark median groove and black eye rings. Sternum pale yellow with darker margins and distinct dark spots on margin at fourth coxae. Chelicerae red-brown with scattered long black bristles on anterior face. Endites and labium brown, except for light yellow distal margins. Legs and coxae pale yellow and clothed with long dark hairs and scattered bristles. Dorsum of abdomen pale yellow with scattered light gray spots, a little darker at posterior end. A faint, light yellow lanceolate stripe extends along midline. Venter of abdomen pale yellow.

Diagnosis. The epigynum (Fig. 82) has the same general characteristics as that of *C. abbotii abbotoides*, but may be distinguished from that species by its larger size, and by differences in details.

Natural History. Found under rocks and logs in dry areas.

Record. Colorado: Piedra, 7000 ft., Archuleta Co. (H. and L. Levi).

CLUBIONA ABBOTII ABBOTII L. Koch

Figures 42-43, 83, 181-182, 236

Clubiona abbotii L. Koch, 1866, Die Arachniden-Familie der Drassiden, p. 303, pl. 12, fig. 193 (♀ type from North America: Baltimore). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 513. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1107.

Clubiona rubra Keyserling, 1887, Verhandl. Zool. Bot. Gesell. Wien, vol. 37, p. 436, pl. 6, fig. 12 (δ type from Cambridge, Massachusetts, in the Museum of Comparative Zoology).

Clubiona bufonis Chamberlin, 1925, Bull. Mus. Comp. Zool., vol. 67, p. 220 (δ type from Upper Missouri River in the Museum of Comparative Zoology). NEW SYNONYMY.

Clubiona procteri, Bryant, 1944, Psyche, vol. 52, p. 187, fig. 9 (φ , err. det.).

Measurements. Female: Length 3.66-5.70 mm.; average 4.54 mm. Carapace 2.35 mm. long, 1.32 mm. wide. First femur, 1.32 mm.; patella, 0.60 mm.; tibia, 0.90 mm.; metatarsus, 0.69 mm.; tarsus, 0.39 mm. Fourth femur, 1.74 mm.; patella, 0.60 mm.; tibia, 1.20 mm.; metatarsus, 1.38 mm.; tarsus, 0.43 mm.

Male: Length 3.24-4.40 mm.; average 3.76 mm. Carapace 1.74 mm. long, 1.20 mm. wide. First femur, 1.43 mm.; patella, 0.67 mm.; tibia, 1.20 mm.; metatarsus, 0.90 mm.; tarsus, 0.52 mm. Fourth femur, 1.83 mm.; patella, 0.67 mm.; tibia, 1.30 mm.; metatarsus, 1.67 mm.; tarsus, 0.52 mm.

Description. Anterior median eyes their diameter apart in female, less than the radius apart in male, closer to larger laterals. Posterior medians separated by two and a half diameters in female, by more than two diameters in male, closer to laterals. Epigynum illustrated by Figure 83, palpus by Figures 42-43.

Comments. This species is a very common and widespread clubionid which shows considerable variation throughout its range. *C. abbotii* has been divided by the author into two subspecies, *C. a. abbotii* and *C. a. abbotoides*. Chamberlin and Ivie originally described *C. abbotoides* as a new species, but since these spiders show constant minor differences from *C. abbotii*, and since *C. abbotii* has not been found in the range of *abbotoides*, it is logical to assume that *abbotoides* is a geographic race of *abbotii*. There are indications that with further study other subspecies will be found to exist.

Diagnosis. *C. abbotii* is most closely related to *C. newnani*, but is readily distinguished from that species. In *C. newnani*, the tooth on the middle of the bulb is distinctly longer than in *abbotii* and the retrolateral apophysis of *newnani* is greatly swollen ventrally.

Distribution. Southern Canada and most parts of the United States, rare on Pacific coast and the Southwest.

Records. *Alabama:* *Andalusia; Hatchet Creek; Auburn, S. of Arifton; Mobile. *Colorado:* Fountain Valley. *Connecticut:* Norwalk; *Branford; *Burnet Corners; Cheshire; Hadlyme; *Jordan; New Haven; *Portland; Sandy Hook. *District of Columbia:* Washington. *Florida:* Orlando; Lake Co.; Alachua Co. *Georgia:* 5 mi. N. of Macon; *Okefenokee Swamp; *S. of Lake Park; *4 mi. NE. of Sylvania. *Illinois:* Fox Lake; Havana; Urbana. *Indiana:* *Richmond; *Valparaiso; *Arlington. *Kentucky:* Nr. Louisville; Summit. *Louisiana:* Shreveport; Tallulah; Baton Rouge; Sorrento. *Maine:* Falmouth. *Maryland:* College Park; Baltimore; Smithsburg. *Massachusetts:* Amherst; *Nantucket; Cambridge; Windsor; Holliston; Clarendon. *Michigan:* Ann Arbor; *Grand Marshes; Douglas Lake; Pawpaw; Selfridge Field. *Minnesota:* Fort Snelling, Albert Lea; Minneapolis, Lake Co.; Lake Pepin. *Mississippi:* Lucedale; Agricultural College. *Montana:* Canyon Creek. *Nebraska:* Badlands. *New Hampshire:* Randolph; Hollis; Fitzwilliam; Moosilauke; Squam Lake. *New Jersey:* Pine Brook; Ramsey. *New York:* Plattsburg; Onondaga Co.; Bergen Beach; Lake Sebago, Interstate Park; Staten Isl.; Long Isl.; Ithaca; Poughkeepsie; Sea Cliff; Ringwood; Renwick; Flushing; Shelter Island; Orient; Mendon Ponds, Monroe Co.; Spencer; Gardiners Isl.; McLean; Winthrop Beach; New Rochelle; Old Forge; Mt. Marcey; Black Brook, Clinton Co.; Freeville; Raquette Lake; Letehworth Park; Wawbeek; Jordanville; Labrador Pond, Tompkins Co.; Slide Mtn.; Sodus Point; Cinnamon Lake; Rochester; Wilmington Notch; *Gloversville; *Lake Bluff; Juanita Isl.; Albany; Kingston; *Cragmoor; *Maratanza Lake; *Pine Isl.; *Hunter. *North Carolina:* *Belsam; *Mt. Graybeard; *Clay Co.; Raleigh. *Ohio:* *Columbus; Springfield; Gambier; Sandusky. *Oklahoma:* Texas Co. *Oregon:* Eugene. *Pennsylvania:* North Wales; *Pittsburgh; Schenley Park, Pittsburgh; Allegheny Co. *Tennessee:* Knoxville, Newfound Gap; Kingston. *Texas:* Orange; Liberty; Dallas; Port Arthur; Brazos Co.; Kerrville; New Braunfels; Houston. *Utah:* *Clear Creek, Raft River Mtus.; Salt Lake City; W. side Utah Lake; *Moab. *Virginia:* Glencarlyn; Falls Church. *Wisconsin:* Dane Co.; Lincoln Co.; Marathon Co.; Monroe Co.; Racine Co.; Taylor Co.

Alberta: Beaver Lake. *Ontario*: Galsnear Point; Owen Point; Point Pelee; 1 mi. E. of Kingston; Wellington; North Bay; Huyks Bay; Huyks Point; 3 mi. N. of Newburg; 1 mi. W. of Newburg, Newmarket; Brown Hill; Toronto; Elmhurst Beach; Port Credit; Ottawa; Warner; Lake Arehamboult. *Manitoba*: Horseshoe Lake; Le Pas.

CLUBIONA ABBOTHI ABBOTOIDES Chamberlin and Ivie

Figures 44-45, 79, 183, 237

Clubiona abbotoides Chamberlin and Ivie, 1946, Bull. Univ. Utah, vol. 36, no. 13, p. 10, figs. 13-14 (δ type from 1.5 mi. NE. of Fruitland, Idaho, in the University of Utah Collection).

Measurements. Female: Length 3.78-5.20 mm.; average 4.33 mm. Carapace 1.86 mm. long, 1.26 mm. wide. First femur, 1.14 mm.; patella, 0.54 mm.; tibia, 0.90 mm.; metatarsus, 0.60 mm.; tarsus, 0.52 mm. Fourth femur, 1.50 mm.; patella, 0.60 mm.; tibia, 1.14 mm.; metatarsus, 1.32 mm.; tarsus, 0.54 mm.

Male: Length 3.48-4.10 mm.; average 3.76 mm. Carapace 1.83 mm. long, 1.26 mm. wide. First femur, 1.26 mm.; patella, 0.54 mm.; tibia, 1.02 mm.; metatarsus, 0.78 mm.; tarsus, 0.39 mm. Fourth femur, 1.50 mm.; patella, 0.60 mm.; tibia, 1.20 mm.; metatarsus, 1.38 mm.; tarsus, 0.45 mm.

Diagnosis. Only careful comparison of the genitalia (Figs. 44-45, 79) distinguishes this from *C. a. abbotii*.

Records. *Idaho*: 2 mi. NE. of Fruitland; 1.5 mi. NE. of Fruitland (many records).

CLUBIONA PIKEI Gertsch

Figs. 56-57, 91, 189, 249

Clubiona pikci Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 10, figs. 25-27 (δ type from Long Island, New York, in the American Museum of Natural History). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 516.

Clubiona plumbi, Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 379 (in part; err. det.).

Measurements. Female: Length 3.54-5.50 mm.; average 4.34 mm. Carapace 1.80 mm. long, 1.14 mm. wide. First femur, 0.96 mm.; patella, 0.58 mm.; tibia, 0.74 mm.; metatarsus,

0.57 mm; tarsus, 0.36 mm. Fourth femur, 1.38 mm.; patella, 0.63 mm.; tibia, 0.96 mm.; metatarsus, 1.20 mm.; tarsus, 0.39 mm.

Male: Length 3.18-4.75 mm.; average 3.94 mm. Carapace 1.86 mm. long, 1.32 mm. wide. First femur, 1.20 mm.; patella, 0.54 mm.; tibia, 0.96 mm.; metatarsus, 1.02 mm.; tarsus, 0.42 mm. Fourth femur, 1.56 mm.; patella, 0.54 mm.; tibia, 1.14 mm.; metatarsus, 1.38 mm.; tarsus, 0.48 mm.

Description. Anterior median eyes their radius or less apart, as far from laterals in female, half the distance in male. Posterior medians separated by three diameters in female, two and a half in male.

Diagnosis. *C. pikei* is closely related to *C. plumbi*, the main differences being the larger size of *pikei*, the details of the palpus (Figs. 56-57) and the more widely spaced posterior median eyes.

Kaston (1948) placed *C. pikei* in the synonymy of *C. plumbi*. I have examined the holotype of *plumbi* and compared it with paratypes of *C. pikei*, and am in agreement with Gertsch that these are two distinct species.

Distribution. Atlantic coast states from Maine to Florida.

Records. *Connecticut:* Norwalk, ♀ paratype; *Orange; *Shelton; *Wallingford; *West Haven; *Westville. *Florida:* Dune-din; Cocoa Beach, ♂; Alachua Co., ♀. *Maine:* Orono, ♀. *Massachusetts:* Provincetown, ♂, ♀; Woods Hole, ♀ paratypes; Duxbury, ♂, ♀; Ipswich, ♀; Winthrop, ♀; Gloucester, Eastern Point, ♂, ♀; James Brewster's Isl., Boston Harbor, ♀. *New Jersey:* Lakewood, ♀ paratype. *New York:* Long Isl., ♀ allotype, ♀, ♂ paratypes; Onondaga Co., ♂, ♀; Lloyd's Neck, L. I., ♀; Sea Cliff, L. I., ♀; Riverhead, L. I., ♂, ♀; Tottenville, L. I., ♂, ♀; Orient, L. I., ♂; Watermill, ♂, ♀; Cold Spring Harbor, L. I., ♀; Montauk Point, L. I., ♂, ♀; Canoe Place, L. I., ♂, ♀. *Pennsylvania:* Roxbury, ♂. *Vermont:* South Newfane, ♂. *Virginia:* Falls Church. *Georgia:* *NW. of Elberton, ♂.

CLUBIONA POMOA Gertsch

Figures 72-73, 93, 192, 239

Clubiona pomoa Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 6, figs. 7-9 (♂ type from Oakland, Alameda Co., California, in the American Museum of Natural History).

Measurements. Female: Length 4.08-5.22 mm.; average 4.50 mm. Carapace 1.98 mm. long, 1.44 mm. wide. First femur, 1.14 mm.; patella, 0.60 mm.; tibia, 0.84 mm.; metatarsus, 0.63 mm.; tarsus, 0.42 mm. Fourth femur, 1.50 mm.; patella, 0.60 mm.; tibia, 1.08 mm.; metatarsus, 1.26 mm.; tarsus, 0.45 mm.

Male: Length 3.48-4.86 mm.; average 4.08 mm. Carapace 1.92 mm. long, 1.26 mm. wide. First femur, 1.20 mm.; patella, 0.60 mm.; tibia, 1.08 mm.; metatarsus, 0.76 mm.; tarsus, 0.45 mm. Fourth femur, 1.50 mm.; patella, 0.63 mm.; tibia, 1.08 mm.; metatarsus, 1.34 mm.; tarsus, 0.46 mm.

Description. Anterior median eyes two-thirds their diameter apart in female, one-half in male. Posterior median eyes two and a half diameters apart in female, two diameters in male, about half as far from laterals.

Diagnosis. Although *C. pomoa* has the general characteristics of the group, it is quite distinct. The male palpus (Figs. 72-73) is characterized by the well defined bulb on the embolus at the base, and by the fact that the retrolateral apophysis of the tibia is much longer than the dorsal apophysis. Unlike other members of Group III, the epigynum of *pomoa* has the sperm receptacles contiguous (Fig. 93).

Records. California: Oakland, ♀ allotype, ♂, ♀ paratypes; San Francisco, ♂ paratype; Gaviota, ♂, ♀; Santa Barbara, ♂.

CLUBIONA JOHNSONI Gertsch

Figures 48-49, 96, 187, 235

Clubiona johnsoni Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 14, figs. 43-45 (♂ type from Norwalk, Connecticut, in the American Museum of Natural History). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 515.

Measurements. Female: Length 3.06-4.44 mm.; average 3.66 mm. Carapace 1.81 mm. long, 1.17 mm. wide. First femur, 0.96 mm.; patella, 0.50 mm.; tibia, 0.78 mm.; metatarsus, 0.55 mm.; tarsus, 0.39 mm. Fourth femur, 1.25 mm.; patella, 0.54 mm.; tibia, 0.96 mm.; metatarsus, 1.14 mm.; tarsus, 0.43 mm.

Male: Length 2.58-3.36 mm.; average 3.02 mm. Carapace 1.47 mm. long, 1.05 mm. wide. First femur, 1.08 mm.; patella,

0.48 mm.; tibia, 0.86 mm.; metatarsus, 0.63 mm.; tarsus, 0.38 mm. Fourth femur, 1.38 mm.; patella, 0.48 mm.; tibia, 1.02 mm.; metatarsus, 1.14 mm.; tarsus, 0.39 mm.

Description. Anterior median eyes four-fifths diameter apart in female, one-third diameter in male. Posterior medians separated by three diameters in female, by two in male, about half as far from slightly larger laterals. Epigynum illustrated by Figure 96, palpus by Figures 48-49.

Natural History. Mature specimens of both sexes have been collected from debris brought down by spring floods, indicating that this species overwinters, at least to a certain extent, in the adult stage. A female was collected on August 3, with an egg sac containing 22 eggs.

Distribution. Southeastern Canada, New England and Great Lake states.

Records. *Connecticut:* Norwalk, ♀ allotype; ♂, ♀ paratypes; Shelton, ♀ paratypes; Watertown, ♂ paratype; *Greenwich; *Orange; *Sandy Hook. *Illinois:* nr. Chicago, ♀ paratype. *Massachusetts:* Duxbury, ♂; Allston, ♂; Holliston, ♂; Sharon, ♂. *Michigan:* Dunes nr. Sawyer, ♂. *New Hampshire:* Randolph, ♂; Intervale, ♂; Dublin, ♂; Mt. Washington, ♀. *New York:* Cold Spring Harbor, ♂; Peru, ♂; Sea Cliff, ♂; Long Island, ♀. *New Jersey:* Ramsey, ♂ paratype. *Rhode Island:* Portsmouth, ♂. *Vermont:* South Newfane, ♂.

Nova Scotia: Greenwich, ♀. *Ontario:* Port Credit, ♂. *Saskatchewan:* Saskatoon, ♂ paratype.

CLUBIONA NEWNANI Ivie and Barrows, emend.

Figures 52-53

Clubiona newmani Ivie and Barrows, 1935, Bull. Univ. Utah, vol. 26, no. 6, p. 20, pl. 7, figs. 57-58 (♂ type from Lake Newman [*sic* = Newnans Lake] Gainesville, Florida in the University of Utah collection). Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 15.

Measurements. Male: Length 3.24-3.66 mm.; average 3.52 mm. Carapace 1.74 mm. long, 1.26 mm. wide. First femur, 1.20 mm.; patella, 0.60 mm.; tibia, 1.20 mm.; metatarsus, 0.84 mm.; tarsus, 0.51 mm. Fourth femur, 1.62 mm.; patella, 0.60 mm.; tibia, 1.20 mm.; metatarsus, 1.50 mm.; tarsus, 0.53 mm.

Description. Anterior median eyes their radius apart, slightly closer to laterals. Posterior medians separated by two diameters, one diameter from larger laterals. The female is not known.

Diagnosis. This species is closely related to *C. abbotii*, differing mainly in the much broader retrolateral tibial apophysis of the male palpus (Figs. 52-53).

Records. *Florida:* Silver Springs, ♂; Highland Hammock, nr. Sebring, ♂; Alachua Co., ♂; *Newnans Lake, Gainesville, ♂; Sebastian, ♂. *Pennsylvania:* North Wales, ♂. *Virginia:* Siles Co., ♂.

CLUBIONA NICHOLSI Gertsch

Figures 68-69, 85, 199, 241

Clubiona nicholsi Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 8, figs. 5-6 (♂ type from Mastic, Long Island, New York, in the American Museum of Natural History). Barnes, 1953, Amer. Mus. Novitates, no. 1632, p. 16, fig. 19. Roewer, 1955, Katalog der Araneae, vol. 2a, p. 516.

Measurements. Female: Length 4.86 mm. Carapace 2.34 mm. long, 1.50 mm. wide. First femur, 1.41 mm.; patella, 0.72 mm.; tibia, 1.14 mm.; metatarsus, 0.80 mm.; tarsus, 0.56 mm. Fourth femur, 1.74 mm.; patella, 0.78 mm.; tibia, 1.26 mm.; metatarsus, 1.62 mm.; tarsus, 0.56 mm.

Male: Length 4.02-4.50 mm.; average 4.23 mm. Carapace 2.22 mm. long, 1.50 mm. wide. First femur, 1.62 mm.; patella, 0.81 mm.; tibia, 1.20 mm.; metatarsus, 1.02 mm.; tarsus, 0.63 mm. Fourth femur, 1.80 mm.; patella, 0.81 mm.; tibia, 1.38 mm.; metatarsus, 1.74 mm.; tarsus, 0.57 mm.

Description. Anterior median eyes separated by less than a radius, about the same distance from smaller lateral eyes. Posterior medians about three diameters apart, half as far from larger laterals.

Diagnosis. The relatively short, heavy tibial apophysis and the enlargement at the base of the embolus (Figs. 68-69) and the epigynum (Fig. 85) distinguishes this species.

Natural History. This species is found abundant in "thick moist drift straw in the intertidal marshes" (Barnes, 1953).

Records. *Massachusetts:* Lynn, ♀, ♂. *North Carolina:* Beaufort (R. Barnes).

CLUBIONA PROCTERI Gertsch

Figures 66-67, 88, 198, 240

Clubiona procteri Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 10, figs. 17-18 (δ type from Indian Town, Florida, in the American Museum of Natural History).

Clubiona hilltonia Chamberlin and Ivie, 1944, Bull. Univ. Utah, vol. 35, no. 9, p. 182, fig. 201 (δ type from Briar Creek, 7 miles north of Sylvania, Georgia, in the University of Utah collection). NEW SYNONYMY.

Measurements. Female: Length 3.5 mm. Carapace, 1.42 mm. long, 0.96 mm. wide. First femur, 0.90 mm.; patella, 0.42 mm.; tibia, 0.72 mm.; metatarsus, 0.48 mm.; tarsus, 0.30 mm. Fourth femur, 1.08 mm.; patella, 0.48 mm.; tibia, 0.78 mm.; metatarsus, 0.90 mm.; tarsus, 0.30 mm.

Male: Length 3.16 mm. Carapace 1.52 mm. long, 0.98 mm. wide. First femur, 1.11 mm.; patella, 0.56 mm.; tibia, 1.06 mm.; metatarsus, 0.74 mm.; tarsus, 0.40 mm. Fourth femur, 1.37 mm.; patella, 0.52 mm.; tibia, 0.95 mm.; metatarsus, 1.20 mm.; tarsus, 0.43 mm.

Description. Anterior median eyes separated by one-third diameter in female, by radius in male. Posterior medians separated by two and one-half diameters in female, two diameters in male; half as far from lateral eyes.

Diagnosis. The male is characterized by the retrolateral tibial apophysis of the palpus which bends sharply dorsad and the dorsal apophysis which is a short, sharply pointed process (Figs. 66-67). The epigynum has very large, distinctively shaped sperm duct openings (Fig. 88).

Comments. Miss E. B. Bryant described the female of *Clubiona procteri* in 1945 (Psyche, vol. 52, p. 3). Two of her specimens examined were found to be *C. abbotii*.

Records. *Alabama:* Silver Hill, δ . *Florida:* Lake Placid, δ ; Port Mayaca, φ ; 0.5 mi. N. of Archbold Biol. Sta., φ ; *Indian-town, δ ; *Wabasco, δ . *Georgia:* *7 mi. N. of Sylvania, Briar Creek, δ . *North Carolina:* *Raleigh, δ .

CLUBIONA KAGANI Gertsch

Figures 89, 200, 243

Clubiona kagani Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 6, fig. 6 (φ type from Riesel, Texas, in the American Museum of Natural History).

Measurements. Female: Length 3.06 mm. Carapace 1.35 mm. long, 0.97 mm. wide. First femur, 0.52 mm.; patella, 0.40 mm.; tibia, 0.55 mm.; metatarsus, 0.42 mm.; tarsus, 0.28 mm. Fourth femur, 1.00 mm.; patella, 0.45 mm.; tibia, 0.75 mm.; metatarsus, 0.96 mm.; tarsus, 0.31 mm.

Description. Anterior median eyes their radius apart, closer to the laterals. Posterior median eyes two diameters apart, a diameter from laterals. Epigynum illustrated by Figure 200. Only the female is known.

Record. Texas: Houston, ♀.

CLUBIONA CATAWBA Gertsch
Figures 76-77, 92, 194, 244

Clubiona catawba Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 10, figs. 10-11 (♂ type from Kingston, Tennessee, in the American Museum of Natural History).

Clubiona alachua Gertsch, 1941, Amer. Mus. Novitates, no. 1148, pp. 4, 6, fig. 4 (♀ type from Alachua County, Florida, in the American Museum of Natural History). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 513. NEW SYNONYMY.

Measurements. Female: Length 2.76-3.06 mm.; average 2.91 mm. Carapace 1.40 mm. long, 0.93 mm. wide. First femur, 0.80 mm.; patella, 0.40 mm.; tibia, 0.63 mm.; metatarsus, 0.41 mm.; tarsus, 0.28 mm. Fourth femur, 1.08 mm.; patella, 0.42 mm.; tibia, 0.80 mm.; metatarsus, 0.95 mm.; tarsus, 0.32 mm.

Male: 2.34-3.36 mm.; average 2.90 mm. Carapace 1.50 mm. long, 1.00 mm. wide. First femur, 0.90 mm.; patella, 0.50 mm.; tibia, 0.87 mm.; metatarsus, 0.58 mm.; tarsus, 0.32 mm. Fourth femur, 1.20 mm.; patella, 0.53 mm.; tibia, 0.90 mm.; metatarsus, 1.17 mm.; tarsus, 0.40 mm.

Description. Anterior median eyes their radius apart. Posterior medians two and one-half diameters apart, about a diameter or more from laterals.

Diagnosis. This species is distinguished by the straight retro-lateral tibial apophysis of the palpus and the ventrally directed sharply pointed dorsal apophysis (Figs. 76-77).

Records. Florida: Nr. Sebring, ♀ paratype; Blountstown, ♀ paratype, ♂; Sebastian, ♀; *Alachua Co., ♀; *Jasper, ♀.

Georgia: *Millen, ♀; *S. of Lake Park, ♀; Nr. Waycross, ♂ paratypes; *Lyone. *Michigan*: Stony Lake, Oceana Co., ♂. *Mississippi*: Centreville. *North Carolina*: Durham. *Ohio*: Gambier. *Tennessee*: *Kingston. *Texas*: Austin; Victoria; 5 mi. E. of Rio Grande City. *Virginia*: Falls Church.

CLUBIONA SALTITANS Emerton

Figures 58-59, 188, 248

Clubiona saltitans Emerton, 1919, Canadian Ent., vol. 51, p. 107, fig. 14 (♂ syntypes from Ipswich, Massachusetts, in the Museum of Comparative Zoology). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 517. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1152.

Measurements. Female: Length 4.13 mm. Carapace 1.74 mm. long, 1.10 mm. wide. First femur, 1.02 mm.; patella, 0.54 mm.; tibia, 0.78 mm.; metatarsus, 0.54 mm.; tarsus, 0.34 mm. Fourth femur, 1.38 mm.; patella, 0.54 mm.; tibia, 0.96 mm.; metatarsus, 1.20 mm.; tarsus, 0.36 mm.

Male: Length 3.00-3.46 mm. Carapace 1.63 mm. long, 1.13 mm. wide. First femur, 1.07 mm.; patella, 0.50 mm.; tibia, 0.97 mm.; metatarsus, 0.70 mm.; tarsus, 0.40 mm. Fourth femur, 1.43 mm.; patella, 0.53 mm.; tibia, 1.03 mm.; metatarsus, 1.20 mm.; tarsus, 0.40 mm.

Description. Anterior median eyes one-third diameter apart in female, their radius apart in male. Posterior medians separated by less than two diameters in female, two and a half diameters in male.

Diagnosis. This species is closely related to *C. pikei*, but differs from it in that the retrolateral tibial apophysis of the male palpus is shorter and broader and the dorsal apophysis is broader (Figs. 58-59). The chelicerae of the male are marked with a shallow groove on the medial edge of the dorsal surface, this groove being bordered by low ridges. The epigyna of the two species differ in that the openings of *C. saltitans* are much longer than wide and closer together (Fig. 248) than those of *C. pikei*.

Comments. The series of specimens which Emerton used as the type material includes some specimens of *Clubiona pikei*. The male described and figured by Emerton I have now designated lectotype. A vial containing two females of *C. pikei* in the

Cornell University collection is labeled in handwriting "*Type, Clubiona saltitans*"; presumably it is the allotype of the female described at a later date.

Records. Connecticut: *Hadlyme, ♂; *New Haven, ♂; *Orange, ♂. *District of Columbia*: Washington, ♂. *Florida*: Wabasso, ♂. *Illinois*: *Kankakee Co., ♂. *Massachusetts*: Holliston, ♂; *Ipswich, ♂; *Plum Isl., ♂; *Wellfleet, ♂; *Nantucket. *New York*: Bergen Beach, Ontario Co., ♂; Onondaga Co., ♂; Tottenville, L. I., ♂.

CLUBIONA KIOWA Gertsch
 Figures 62-63, 90, 186, 245

Clubiona kiowa Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 12, figs. 23-24 (♂ type from Dallas, Texas, in the American Museum of Natural History).

Measurements. Female: Length 3.72 mm. Carapace 1.50 mm. long, 0.86 mm. wide. First femur, 1.00 mm.; patella, 0.40 mm.; tibia, 0.70 mm.; metatarsus, 0.53 mm.; tarsus, 0.33 mm. Fourth femur, 1.33 mm.; patella, 0.53 mm.; tibia, 0.90 mm.; metatarsus, 1.07 mm.; tarsus, 0.40 mm.

Male: Length 2.76-3.30 mm. Carapace 1.56 mm. long, 1.00 mm. wide. First femur, 0.95 mm.; patella, 0.48 mm.; tibia, 0.86 mm.; metatarsus, 0.62 mm.; tarsus, 0.40 mm. Fourth femur, 1.30 mm.; patella, 0.48 mm.; tibia, 1.00 mm.; metatarsus, 1.19 mm.; tarsus, 0.40 mm.

Description. Anterior median eyes their radius apart, closer to laterals. Posterior medians slightly more than two diameters apart.

Diagnosis. The genitalia (Figs. 62-63, 90) distinguish this species from *C. pikei*.

Records. Michigan: Ann Arbor, ♀, ♂. *Texas*: Edinburg, ♂, ♀; La Gringa Resaca, ♀; Dallas, ♂. *Mexico*: Monterrey, ♀.

CLUBIONA MUTATA Gertsch
 Figures 64-65, 80, 185, 246

Clubiona mutata, Gertsch 1941, Amer. Mus. Novitates, no. 1148, p. 14, figs. 19-20 (♂ type from Salt Lake City, Utah, in the American Museum of Natural History).

Clubiona screeveni Chamberlin and Ivie, 1944, Bull. Univ. Utah, vol. 35, p. 184, figs. 204-206 (δ type from Millen, Georgia, in the University of Utah collection). NEW SYNONYMY.

Measurements. Female: Length 2.40-3.83 mm.; average 3.20 mm. Carapace 1.37 mm. long, 0.97 mm. wide. First femur, 0.77 mm.; patella, 0.33 mm.; tibia, 0.51 mm.; metatarsus, 0.40 mm.; tarsus, 0.30 mm. Fourth femur, 1.03 mm.; patella, 0.37 mm.; tibia, 0.73 mm.; metatarsus, 0.87 mm.; tarsus, 0.37 mm.

Male: Length 2.60-3.56 mm.; average 2.91 mm. Carapace 1.40 mm. long, 1.00 mm. wide. First femur, 0.90 mm.; patella, 0.40 mm.; tibia, 0.63 mm.; metatarsus, 0.50 mm.; tarsus, 0.35 mm. Fourth femur, 1.17 mm.; patella, 0.47 mm.; tibia, 0.77 mm.; metatarsus, 0.93 mm.; tarsus, 0.34 mm.

Description. Anterior median eyes their diameter apart, closer to the slightly larger laterals. Posterior median eyes nearly three diameters apart in female, more than two diameters in male.

Diagnosis. The dorsal tibial apophysis of the male palpus of *C. mutata* (Figs. 64, 65) is sharply pointed and comparatively narrow, whereas in *C. pikei*, the dorsal tibial apophysis is broad and truncate. The sperm duct openings of the epigynum of *C. mutata* (Fig. 80) are more rounded and farther spaced than in *C. pikei*.

Records. *Colorado:* Boulder. *Georgia:* *Millen, δ , φ ; *N. of Sylvania, δ . *Kansas:* Manhattan, δ . *Nebraska:* 9 mi. NW. of Lincoln, δ , φ . *North Carolina:* Durham, δ . *Utah:* Salt Lake City, δ . *Washington:* Spokane, δ . *Wyoming:* Bridge Bay, Yellowstone Natl. Park, δ , φ .

Saskatchewan: Saskatoon, δ paratype.

CLUBIONA OTEROANA Gertsch

Figures 94, 193, 238

Clubiona oteroana Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 6, fig. 3 (φ type from Camp Mary White, Otero County, New Mexico, in the American Museum of Natural History).

Measurements. Female: Length, 4.20 mm. Carapace 2.04 mm. long, 1.32 mm. wide. First leg missing. Fourth femur, 1.42 mm.; patella, 0.70 mm.; tibia, 1.10 mm.; metatarsus, 1.32 mm.; tarsus, 0.45 mm.

Description. Anterior median eyes a little more than a diameter apart. Posterior median eyes two and a half times their diameter apart, a little more than a diameter from subequal lateral eyes. The sperm duct openings are large circles close together at the posterior edge of the epigynum (Fig. 94). The male is not known.

CLUBIONA DYASIA Gertsch

Figures 74-75

Clubiona dyasia Gertsch, 1941, Amer. Mus. Novitates, no. 1148, p. 4, figs. 1-2
(♂ type from Dyas Creek, Baldwin County, Alabama, in the American Museum of Natural History).

Measurements. Male: Length 3.02 mm. Carapace 1.50 mm. long, 0.99 mm. wide. First femur, 0.92 mm.; patella, 0.42 mm.; tibia, 0.81 mm.; metatarsus, 0.66 mm.; tarsus, 0.39 mm. Fourth femur, 1.22 mm.; patella, 0.54 mm.; tibia, 0.90 mm.; metatarsus, 1.14 mm.; tarsus, 0.42 mm.

Description. Anterior median eyes their radius apart, about half as far from slightly larger laterals. Posterior median eyes more than their diameter apart, slightly less than a diameter from laterals. Retrolateral tibial apophysis of palpus bifid (Figs. 74-75). The female is not known.

CLUBIONA RIPARIA L. Koch

Figures 125-128, 145, 219

Clubiona riparia L. Koch, 1866, Die Arachniden Familie der Drassiden, p. 294, pl. 12, fig. 187 (♀ type from Baltimore, North America). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 517. Bonnet, 1956, Bibliographia Arancorum, vol. 2, p. 1151.

Clubiona ornata Emerton, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 183, pl. 5, fig. 9 (3 juv. ♀ syntypes from Dublin, New Hampshire, in the Museum of Comparative Zoology). Name preoccupied by *C. ornata* Thorell, 1875.

Clubiona americana Banks, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 22.
New name for *C. ornata* Emerton.

Measurements. Female: 5.44-10.16 mm.; average 7.72 mm. Carapace 2.64 mm. long, 1.92 mm. wide. First femur, 2.28 mm.; patella, 1.02 mm.; tibia, 1.80 mm.; metatarsus, 1.35 mm.; tarsus, 0.75 mm. Fourth femur, 2.58 mm.; patella, 1.02 mm.; tibia, 1.80 mm.; metatarsus, 2.28 mm.; tarsus, 0.78 mm.

Male: Length 4.56-6.00 mm.; average length 5.37 mm. Carapace 2.28 mm. long, 1.62 mm. wide. First femur, 2.10 mm.; patella, 0.96 mm.; tibia, 2.04 mm.; metatarsus, 1.59 mm.; tarsus, 0.90 mm. Fourth femur, 2.34 mm.; patella, 0.90 mm.; tibia, 1.74 mm.; metatarsus, 2.22 mm.; tarsus, 0.80 mm.

Description. Anterior median eyes almost their diameter apart in female, three-fourths diameter apart in male. Posterior median eyes two and a half diameters apart, two-thirds as far from the laterals. Chelicerae slender, but attenuated in male. Abdomen with a dark lanceolate mark on dorsum; on each side of it is a yellow-brown stripe with irregular edges. Epigynum with a median lobe (Fig. 145) which may be very short, palpus illustrated by Figures 125-127.

Natural History. The habits of *C. riparia* are similar to those of its European relative, *C. grisea* L. Koch. This spider has been collected mainly from tall grass near streams and ponds. During the breeding season the female folds a blade of grass together with silk to form a three-sided nest which is lined with silk. The nest is used as a place of concealment for the egg sac, serving later as a nursery for the spiderlings and a coffin for the parents. A female was taken on June 18, guarding her egg sac. The egg sac was a flat packet containing 114 light yellow eggs, each of which was approximately 0.76 mm. in diameter. Another egg mass in the form of a flattened oval was collected in June, the egg sac measuring 5.4 by 1.8 mm. There were 36 oval eggs in the sac, each measuring about 0.80 by 0.70 mm. *C. riparia* overwinters in the penultimate instar under bark and debris on the ground and individuals mature as early as April.

Distribution: Alaska, eastern Canada, eastern United States, west to Utah.

Records. *Connecticut:* Colebrook; Shelton; Sandy Hook; East Putnam; Branford; *Barkhamsted; *Salisbury; *Watertown; *Windsor; Windsor Locks. *Illinois:* *Waukegan. *Maine:* Mount Desert Isl.; Lincoln; Moosehead Lake; Milbridge; *Bayville; *Portland. *Massachusetts:* East Gloucester; *Sharon; *Brookline; Holliston. *Michigan:* Douglas Lake; New Baltimore; Sanford; Lexington. *Minnesota:* Ramsey Co. *New Hampshire:*

Shelburne; *Mt. Washington; *Dublin; *Franconia. *New Mexico*: Beulah (N. Banks). *New York*: McLean; Sport Isl., Sacandaga Park; Long Lake; Black Brook, Clinton Co.; nr. Oswego; Point Breeze, Orleans Co.; Labrador Pond, Cortland Co. Crusoe Lake; Ithaca; Lake Erie Beach, Chautauqua Co.; Junius Bog, Seneca Co.; Trenton Falls; Oak Orchard Swamp; Tunasasa; Rochester; Huyek Preserve, Albany Co.; *Onondaga Co.; Scotia; Albany; *Delmar; Riders Mills; *Poughkeepsie; *Long Isl. *Ohio*: *Wooster. *Pennsylvania*: President; *"Western Pennsylvania." *South Dakota*: Blue Bell, Black Hills; Game Lodge, Black Hills. *Utah*: Fish Lake. *Wisconsin*: St. Croix Falls. *Alaska*: *Homer.

Alberta: Seba Beach; Gull Lake; Fawcett. *Manitoba*: Victoria Beach; N. of Victoria Beach; Owen. *New Brunswick*: Woodstock; Grand Manan Isl. *Nova Scotia*: Weymouth; Truro. *Ontario*: Port Credit; Highland Creek; Newmarket; Toronto; Franks Bay, Lake Nipigon; MacLennon; Tanamakoon, Algonquin Park; Goose Isl., Lake Nipissing; Holst Point; Mindemoya, Lake Manitoulin; Attowapiskat; Red Rock, James Bay; Turkey Point; Hollowell; Wellington; Spruce Bank; Elmhurst Beach, Lake Simcoe; Sproule Bay, Lake Opeongo; N. of Camp Laird; Port Arthur; Pottageville; Lake Opeongo; nr. Minaki; Gananoque. *Quebec*: Ellis Bay, Anticosti; *Gaspé; *Montreal; *Ha-Ha Bay, Bagotville.

CLUBIONA MARITIMA L. Koch

Figures 131-133, 139, 180, 214

Clubiona maritima L. Koch, 1866, Die Arachniden-Familie der Drassiden, p. 310, pl. 12, fig. 198 (♀ type from St. Thomas, Virgin Islands). Roewer, 1955, Katalog der Araneae, vol. 2a, p. 511. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1134.

Clubiona tibialis Emerton, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 180, pl. 5, fig. 3 (♂ and ♀ syntypes from Cambridge, Massachusetts, in the Museum of Comparative Zoology). Roewer 1955, Katalog der Araneae, vol. 2a, p. 517. Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1160. NEW SYNONYMY.

Clubiona transversa Bryant, 1936, Psyche, vol. 43, p. 97, pl. 3, fig. 8 (♀ type from White Rock Lake, Dallas, Texas, in the Museum of Comparative Zoology). Bonnet, 1956, Bibliographia Araneorum, vol. 2, p. 1161. NEW SYNONYMY.

Measurements. Female: Length 5.84-8.88 mm.; average 7.33 mm. Carapace 3.09 mm. long, 2.16 mm. wide. First femur, 2.28 mm.; patella, 1.08 mm.; tibia, 1.86 mm.; metatarsus, 1.41 mm.; tarsus, 0.78 mm. Fourth femur, 2.70 mm.; patella, 1.02 mm.; tibia, 2.10 mm.; metatarsus, 2.52 mm.; tarsus, 0.76 mm.

Male: Length 5.04-7.12 mm.; average 6.26 mm. Carapace 3.12 mm. long, 2.08 mm. wide. First femur, 2.52 mm.; patella, 1.12 mm.; tibia, 2.40 mm.; metatarsus, 1.82 mm.; tarsus, 0.96 mm. Fourth femur, 2.88 mm.; patella, 1.12 mm.; tibia, 2.28 mm.; metatarsus, 2.82 mm.; tarsus, 0.98 mm.

Description. Anterior median eyes two-thirds diameter apart in female, less than radius in male, slightly farther or an equal distance from laterals. Posterior medians three diameters apart in female, two and a half diameters in male. The chelicerae of the male have a shallow concavity on the median surface, bordered by low ridges. The epigynum (Fig. 139) takes up the entire width of the epigastric plate, the palpus is much larger and more complex than found in other members of this genus (Figs. 131-133).

Natural History. This spider has been collected from under stones and debris on the ground. The female makes a cocoon consisting of two sheets of silk connecting the edges of a large blade of grass, and the eggs are placed in an inner case between the two sheets of silk. An egg sac has been taken in June containing 70 eggs. *Clubiona maritima* hibernates usually in the mature stage.

Distribution. Greater Antilles, eastern United States, southeastern Canada.

Records. *Alabama:* Colbert Co. *Connecticut:* South Meriden; Cheshire; Portland; Union; *Mount Carmel; *Shelton. *District of Columbia:* Washington. *Florida:* Pinecrest; Lake Co.; Newnans Lake, Alachua Co.; Volusia Co.; Port Mayaca, Lake Okeechobee; Sebastian; *Runnymede. *Georgia:* Atlanta; Okefinokee Swamp; *Briar Creek, 7 mi. N. of Sylvania; *16 mi. S. of Cordele. *Massachusetts:* *Nantucket; *Cambridge; *Franklin

Park. *Michigan*: *Calhoun Co. *Minnesota*: St. Paul. *Mississippi*: Humphreys Co. **Nebraska*. *New Jersey*: Ramsey. *New York*: Southampton, L. I.; Orient, L. I.; Ithaca; Lakeside; Flushing, L. I. *Ohio*: *Ceder Point. *Pennsylvania*: *"Western Pennsylvania." *Tennessee*: Reelfoot Lake; Knoxville. *Texas*: Brownsville; *White Rock Lake, Dallas. *Wisconsin*: Madison; Marathon Co.

Ontario: 4 mi. S. of Carrying Place; East Beach, Pt. Pelee; Hollowell.

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